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A New General College

By WALTER J. MATHERLY

The Program and Organization of the General College of the University of Florida

AT THE opening of the session of 1935–36, the University of Florida launched its new plan of general education. The new General College will bring to every student during his first two years a broad cultural survey of the basic fields of knowledge regardless of his wishes for later specialization. The seven old-established undergraduate colleges and professional schools of arts and sciences, agriculture, engineering, education, business administration, pharmacy, and architecture and allied arts have been moved to the upper division of the University and consequently, prospective doctors, lawyers, engineers, teachers, and so on are being grouped together in the General College to achieve a required minimum of general education, before they are permitted to pursue exclusively the specialized curriculums offered by the upper division.

While many features of our plan have been adapted from experiments and procedures found in, or tried out by, both American and European institutions of higher education, the University of Florida is the first state university to require all students to pass through the General College. The program incorporates fundamental changes in administration, teaching procedures, curriculums, student achievement, measurement and guidance, motivation, and the general conception of the responsibility of a state university in higher education.

The major phases of the program consist of a group of six comprehensive courses required of all students—except superior students in certain cases—during their first two years, a set of comprehensive examinations on these and certain elective comprehensive or specialized courses,

and a definite system of student guidance which will provide for the adjustment of the individual student's program to his individual needs and abilities.

The organization of the General College had its beginning in the spring of 1934. President John J. Tigert, former United States Commissioner of Education, presented at a meeting of the General Assembly of the University in April what he regarded as the two principal needs of the University: the reorganization of the first two years of the curriculum and the elimination of duplication in courses. He appointed a committee of seven members representing the various undergraduate instructional divisions of the University to study his suggestions and to report on the possibility of putting them into effect.

THE President, after receiving the report of the committee in which reorganization was outlined, decided to effect the reorganization by the appointment of a Committee on Curriculum Reorganization. This committee[1] was appointed in October, 1934, and the members were released from part of their regular duties, were provided special offices, and were given adequate secretarial assistance. The Committee sent to the President in December a mimeographed bulletin of preliminary plans. These plans were sent by the President to all deans and directors of colleges and schools, as well as other interested faculty members, requesting them to indicate the difficulties, if any, which they would experience in putting the preliminary plans into effect.

The Committee also recommended that the President appoint advisory committees to assist in working out the contents of the various comprehensive courses and the methods of teaching to be used. These committees ranging in membership from five to nine were duly appointed. The Committee on Curriculum Reorganization spent most of its time and effort from January to April, 1935, on conferences with the representatives of various colleges and professional schools of the upper division in working out the difficulties of adjusting their programs to the program of the General College. On April 15, all preliminary studies and investigations, as well as other matters calling for specific adjustment, including reports of the various advisory committees on comprehensive courses, were brought to a close, and shortly thereafter the Committee on Curriculum Reorganization made its final report to the President.[2]

The members early concluded, and their experiences confirmed their conclusions, that one of their main tasks was properly to prepare the faculty for the work of the General College. Consequently, they decided to arrange a seminar on the program of the General College primarily for the benefit and instruction of faculty members. This seminar, which was held on the campus of the University

[1]The members were W. J. Matherly, dean of the College of Business Administration, *chairman*; Winston W. Little, of the College of Education; and Alvin P. Black, of the Department of Chemistry.

[2]This report, which eventually was published by the University, carried the title, *The General College: Principal Features of Its Program and Organization*

from June 24 to 29, 1935, was addressed by men[3] who, out of their experience with similar organizations in other universities, pointed out pitfalls to be avoided and made distinct contributions to the plans.

THE program and organization of the General College are founded on the following basic assumptions and principles:

1. That existing curriculums of the various colleges of the University, exclusive of short courses, are designed solely to meet the needs of students who are expected to receive the degrees of these colleges.
2. That the existing program of the first two years of the University does not effectively meet the requirements of approximately one-half of our students who, for various reasons, drop out before they reach the upper division, and of approximately two-thirds who drop out before graduation.
3. That the new program should provide a uniform two-year arrangement which not only would meet the demands of the students who drop out but, by broadening the base of education, also would meet more adequately the demands of students desiring to prepare for advanced study in the colleges and professional schools of the upper division; that the work, particularly of the first year, should be closely integrated; and that some students may be able to complete the requirements of the General College in less than two years, while others may remain with profit for a longer period.
4. That the General College should be separate and distinct from the colleges and professional schools of the upper division; that while its work should be articulated with these units of the University, its tasks should be broader than the tasks of these units; and that it should not be unduly restricted by them in solving its problems or carrying out its operations.
5. That since intellectual development is largely a matter of self-development, the program should be so formulated as to stimulate intellectual curiosity and to encourage independent work on the part of individual students.
6. That the progress of students in the General College should be measured in terms of abilities, understandings, appreciations, and skills, instead of courses passed and credit-hours accumulated; and that the passing of comprehensive examinations set to demand should excuse some students from certain courses, and vary the usual time for many others.
7. That comprehensive examinations with a special board of examiners to take charge of the administration thereof, thus separating in execution the teaching function from the examining function, would be essential to evolving and putting into effect the new plan of the General College.
8. That the mastery of the contents of certain comprehensive courses should be required of all students; that other comprehensive courses should be provided as electives; and that certain specialized courses designed to prepare students for advanced study in the colleges and professional schools of the upper division should complete the offerings of the General College.

[3] The seminar was composed of the following national leaders in the changing field of higher education: Dean Boucher, University of Chicago; Merle C. Coulter, chairman of the Introductory General Course in the Biological Sciences, University of Chicago; Malcolm S. MacLean, director of the General College, University of Minnesota; and Ben D. Wood, associate professor of Collegiate Educational Research, Columbia College, Columbia University.

9. That one of the purposes of the General College should be to provide vocational guidance to students. The "guesses" which Freshmen bring to the university concerning the occupations they have "decided" to enter cannot be accepted as final, for many of such choices are mere whims which will be abandoned as the student matures.
10. That a desirable terminus or honorable exit should be provided at the end of the second year for those students who do not go on into the colleges and professional schools of the upper division.
11. That the unity realized in the establishment of comprehensive courses in the General College would eliminate much duplication and inefficiency.
12. That the work of the General College should be articulated with that of the secondary schools; that the new curriculum would doubtless influence the high-school curriculum; and that the near future may present us with high-school products entirely different in type from those we admit to the University at present.

THE establishment of the General College based on these assumptions and principles necessitated a reorganization of the administrative mechanism of the University. Consequently, the University was divided in its undergraduate work into two parts: the lower division and the upper division. The General College composes the lower division and the senior colleges and professional schools the upper division.

The administrative organization of the General College consists of the dean and the administrative board. The dean, with the approval of the deans of the various colleges concerned and the president, selects the teaching staff of the General College. This staff is a teaching staff rather than a line faculty directly under the budget of the General College. Staff members so selected function not only in the General College, but also in the colleges and professional schools of the upper division and Graduate School. A chairman assisted by a vice-chairman is in charge of each comprehensive course. The administrative board of the General College is appointed by the president of the University upon the nomination of the dean. It determines the policies and supervises all the activities of the General College. The board at present is composed of eleven members. The chairmen of all comprehensive courses are members of the board. The dean of the General College is chairman.

The board of university examiners, which consists of five members, will formulate policies governing all comprehensive examinations in the General College and administer them, and also will handle all matters of admission. The dean of the General College is a member of the board; the registrar acts as chairman; and three other members are appointed annually by the president of the University.

All the Freshmen who entered the University in the fall of 1935 were required to register in the General College. All Sophomores, beginning in the fall of 1936, will be required to register in this college. All students registered in the University during or prior to the session of 1934–35 were

required to continue under the old plan. This policy was adopted because it was felt that old students would face considerable difficulty and confusion were they required to transfer to the new plan, and to attempt to adjust themselves and their existing credits thereto.

Students transferring from other institutions to the University will be required to register in the General College and to satisfy its program of general education before they are admitted to the colleges and professional schools of the upper division. During the current session, 1935–36, however, transfer students with 15 semester hours of advanced standing were allowed to register under the old plan. During the session of 1936–37, transfer students with 45 semester hours of advanced standing will be admitted under the old plan. The admission of students to advanced standing is administered by the board of university examiners. This board may vary these requirements wherever circumstances in cases of particular students warrant, especially in cases of transfer students who have high or superior records.

Since all entering Freshmen are required to register in the General College, admission thereto is admission to the University. In formulating our present program of general education we found it necessary to reconstruct our entire system of entrance requirements. No longer do we require fifteen or any other specified number of entrance units. We have abandoned altogether the usual technical requirements for admission. While prospective students must have certain skills and attainments in English and mathematics, only those applicants are rejected who definitely indicate that they are unprepared to profit by one or more years of the curriculum offered by the General College.

The board of university examiners constructs a profile chart of every candidate applying for admission. This chart contains two types of data: high-school record and standing on placement tests administered by the Florida Association of Colleges and Universities. The complete high-school record of every candidate shows detailed information concerning the level of his high-school achievements, the consistency of his progress, his personal qualities, and recommendations sent by his preparatory school. These facts together with the student's rating on the University admission tests are used to construct his profile chart. No one particular element *per se* in his achievements admits the student. Admission is determined by the board of university examiners, not on the detailed technical parts of his record, but on the record as a whole. Any applicant rejected or applicants without a high-school education may take the college-aptitude tests for admission.

Since the University no longer requires any specified high-school credits for admission to its General College, the high schools are free to teach those subjects which they think will contribute the greatest good to the greatest numbers. This decision on the part of the University is of great assistance to small high schools; they are no longer compelled to

imitate large high schools and to offer a large array of thin high-school studies. The core of the system of admission of the University is attainments, which may be achieved with or without high-school class attendance. The mere acquisition of high-school credits will not of itself guarantee admission.

THE major objectives of the General College are eight in number. They are worked out in terms of student abilities—what we expect the General College to do to its students. The program of the General College, therefore, is designed to build up in the student the ability:

1. To acquire and maintain a maximum degree of physical and mental efficiency
2. To use effectively the tools of thought and speech
3. To share fully in the changing duties and responsibilities of citizenship
4. To understand the scientific method and to become familiar with the relationships among, and the contributions of, the various sciences
5. To appreciate the best in religious and philosophical thought
6. To enjoy literature and the other arts and to grow in appreciation of aesthetic values
7. To choose wisely an occupation or a profession
8. To make intelligent use of leisure time

The program of studies which students in the General College follow is composed of four comprehensive courses the first year and two the second year. In addition to these six courses, students each year are required to take military science or physical education. They elect for the remainder of their schedule either additional comprehensive courses or courses required for admission to the colleges and professional schools of the upper division of the University.

The comprehensive courses we have worked out in the General College are not the usual survey courses commonly found in many universities. They are basic courses rather than surveys cutting across many disciplines. The materials in each course are highly selective in character. Since students react in one way or another every day to contemporary thought, culture, and society, the comprehensive courses attempt to condition this reaction and to improve it. They are designed to develop in the student broad understandings, attitudes, and abilities necessary for effective adjustments to changing present-day civilization. The four comprehensive courses in the first year are as follows: Man and the Social World; Man and the Physical World; Reading, Speaking, and Writing; and Man and His Thinking the first half of the year and General Mathematics the second half. The two comprehensive courses in the second year are Man and the Biological World and the Humanities.

The comprehensive courses are so arranged as to form an integrated curriculum in the General College. A syllabus, prepared by instructors in charge, is used in each of the courses. Each of the courses meets normally four times a week. The lecture sections are large; each section has one hundred students or more. At stated intervals each week, the large lecture sections in most cases are broken up into discussion groups

or quiz and demonstration groups. Special sections, both for slow students and for honor students, are provided. The teachers handling the various courses represent the most experienced and best-trained men we have in the University including two men from the Agricultural Experiment Station. A multitude of improved methods and devices are utilized in presenting the materials of the courses and in executing instructional plans in connection therewith. The courses, as a whole, are tied together into a single program by frequent meetings of staff members throughout the year.

PROVISIONS have been made in the General College for individual differences in students. Superior students—approximately the upper 25 per cent of the entering class—are permitted, if they care to do so, to pursue a course considerably different from that which the remainder of the class pursues. These students, if they desire to begin science programs which include physics and chemistry, may substitute these sciences for Man and the Physical World. Moreover, any student the first year may postpone this course until the second year and pursue one of his electives. This enables every student, if he wishes to do so, to start the first year any course looking toward his field of later concentration.

Superior students also who desire to begin programs which include two or more biological sciences may substitute two of these sciences for Man and the Biological World. Moreover, any student may elect that course the first year and postpone Man and the Physical World to the second year. Those, however, who elect the former in the first year must take the latter or its equivalent the second year.

Superior students may be exempted altogether from Man and His Thinking and General Mathematics and may elect any substitutes therefor which they desire. This enables prospective engineering students and others to start basic mathematics—a new course which we have worked out in place of the usual college algebra and analytics—or to take any other course which more readily fits their needs and abilities.

In addition to the six comprehensive year courses all of which are prescribed—except Man and the Physical World, Man and the Biological World, and Man and His Thinking, and General Mathematics for superior students—students in the General College are offered opportunity to elect in the second year three or more other courses. These courses are of two types: courses prescribed as prerequisite to admission to the colleges and professional schools of the upper division, and additional comprehensive courses.

Since each college or professional school of the upper division has prescribed its own standards of admission, courses of the first type naturally vary with the various colleges and schools. No attempt, therefore, will be made here to describe these courses. In general, it may be said that these colleges and schools have adjusted their various curriculums to the program of the General College, and that prospective

graduates therefrom, in the main, will be required to spend no more time to complete their work and secure their degrees than they have been required to spend formerly. In fact, if they are superior students, they can finish their courses in less time than formerly, since these students while they are in the General College may complete the requirements of that college by the passage of comprehensive examinations as rapidly as they like.

The only college or professional school of the upper division that has accepted in the main the philosophy of the General College is the School of Architecture and Allied Arts. This school has already rearranged its curriculum, has done away with hours and credits as such, and has made it possible for its students to complete their work leading to a degree as rapidly as they desire or as their performance warrants. It is expected that the other senior colleges and professional schools, sooner or later, will make similar revisions.

THE General College is a terminal as well as a preparatory institution. Since one-half of our students in the past have never remained longer than two years any way, we have made definite provisions in our curriculum for these types of students. Electives of the second kind, therefore, which students in the General College may take are additional comprehensive courses. To round out our offerings and to meet the needs of students who will remain at the University for two years or less, or who do not plan to go into the colleges and professional schools of the upper division, we have tentatively adopted the following elective comprehensive courses: Basic Mathematics, Our Social Heritage, Selected Literature, Public Opinion, The Reading of French, The Reading of German, The Reading of Spanish, Appreciation of the Fine Arts, Occupations and Vocations, Religions of the World, Outlines of Philosophy, Principles of Health and Sanitation, Economic Foundations of Modern Life, and Citizenship in the American Republic.

The General College has dispensed with clock hours, class marks, and semester-hour credits as prerequisites to the completion of its program. The program is so arranged that the fundamental changes in the thinking of the student may be measured at a subsequent time. Frequent tests are given in each course as a part of instruction, however, and the results are used to make progress reports to guide instructors and students.

The student must successfully pass comprehensive examinations—eight or more—to complete the work of the General College. These examinations, set by the Board of University Examiners, measure mastery in terms of understandings, appreciations, abilities, and skills. A student must be familiar with the work of the various courses and be able to think in the several fields in a comprehensive way in order to pass these examinations. About six hours of time, divided into two equal parts, is required for each examination. The mere acquisition of facts or the practice of cramming by the student is not sufficient preparation for these examinations.

When a student has mastered his program in the General College and has passed the comprehensive examinations, he is granted the Associate of Arts certificate. The program includes eight or nine basic courses and military science or physical education. If a student cares to do so, he may by permission remain in the General College more than two years and elect additional courses. A few superior students well trained in high school or by private instruction may be able to pass one or more of the comprehensive examinations without attending classes, or without attending classes for the entire year. These students may petition the Board of University Examiners at any time for the privilege of taking these examinations.

THE guidance of students is a basic part of the program of the General College. One of the main purposes of the comprehensive courses themselves is to present to the student overviews of all the major fields of human activity before he is allowed to choose one of those fields for specialized study. His choice of a vocation or a profession is thus postponed until he knows more of his capacity and disposition to undertake a specific calling. In addition to the vocational and educational guidance afforded by the various comprehensive courses, more specific guidance is provided by a system of counseling and testing and by an elective comprehensive course which gives definite attention to a thoughtful presentation of the economic and social aspects of all vocations and professions.

Through its system of guidance and its comprehensive courses and examinations, the General College attempts to prepare its students for the social and economic adjustments necessary in the modern world. The College, in brief, seeks to meet not only the demands of students who are able to remain in the University two years or less, but also to broaden the base of education for those who go on for advanced study in the colleges and professional schools of the upper division; to make its educative process a practice of wholesome current living; to train its students to live well and fully; and to prepare the recipients of its instruction to make use of experience and learning as guides to solving the practical problems of every-day life.

An Introductory Course

By JOHN S. ALLEN

The Physical-Science Survey for Freshmen at Colgate University

COLGATE UNIVERSITY is a liberal-arts college limited in enrollment to one thousand men. With this small enrollment it is the intention of the University administration to have all classes small enough to allow and to encourage student participation in the class exercise. To do this the classes in the freshman and sophomore courses are taught usually in sections of less than twenty students. The upper-class work is done in a few classes and many seminars, the latter being a definitely small group that can meet around the conference table for papers and discussions.

To emphasize further the close contact between student and professor each Freshman is assigned to a faculty preceptor. They meet for one hour a week throughout the year and co-operatively attack the general problem of broadening the student's intellectual horizon. This is, of course, an informal relationship and the preceptor often finds himself discussing some of the personal problems or scholastic difficulties that so often bother young college students. As these straighten themselves out the preceptor usually returns to the task of arousing latent or new intellectual interests and directing some of the student's reading into allied topics.

In the sophomore year the student is assigned to a faculty tutor who is a member of the department in which the student wishes to concentrate during the remainder of his college course. The relations between faculty and student are much the same here as in the freshman preceptorial relationship except that the reading or other activity carried on is in the field or department of the student's major interest or at least closely allied to it.

The Freshman is rather limited in the choice of courses that are open to him. He must take two survey courses each semester of his first year. He probably will be required to take one or two more years of a foreign language to satisfy the requirement that he be able to use it. Unless he does well on his placement test in English composition and public speaking, he may be required to take a semester of each. There are practically no elementary courses open to Freshmen in such fields as chemistry, sociology, economics, and history. The sequence of courses in nearly all departments starts after the student has had the survey course in the

particular field. This does not mean that the survey courses take the place of the elementary courses in any field or department as will be shown later.

The four survey courses which are taken in the freshman year are in the following fields: physical sciences, biological sciences, social sciences, and philosophy and religion. A fifth survey course in fine arts and literature is given in the sophomore year because of the schedule difficulties of putting it in the first-year work. Each of the four survey courses given in the freshman year meets four times a week for a semester. Half the class takes the physical-science and social-science surveys the first semester, while the other half takes the other two surveys. The second semester the two groups are reversed.

The Colgate survey courses seem to have been misnamed. To many, the name indicates that a general quick survey of the entire field of work represented is given. Usually that means a skimming over the surface with so many facts introduced that the student does not have time to get any understanding of the principles involved and probably does not remember much of the material covered after he has passed the final examination. Speaking particularly, the course Physical-Science Survey is not an attempt to survey the entire domain of the physical sciences. Neither is it a cut-down version of any or all of the elementary courses in the departments represented, namely, astronomy, chemistry, geology, and physics. No attempt is made to cover all of the elementary principles of these subjects nor is any attempt made to give a fair representation of what may be expected to come later by taking further work in any or all of the departments concerned. Rather a unified course in physical science has been constructed which attempts to give the student a fair panoramic view of the universe in which he lives and his relation to it. The work covered is taken up from the point of view of interest and logical coherence. Since this is a liberal-arts college, the point of view of the engineer or technician is omitted. Less than 30 per cent of the students of any one class choose to concentrate in the physical sciences during their upperclass years. For the remaining 70 per cent this may be the only physical science they take while in college. For them it is a cultural subject and naturally this affects the organization of the course. The aim is to give a definite conception of the physical world, some appreciation of the scientific method and the part it has had in the intellectual life of the race, as well as some of the contributions of the physical sciences to the solution of some contemporary problems. To do this none of the usual textbooks would serve as the proper guide without making departmental distinctions, so our own textbook had to be organized and written around such a central theme.

IN OUTLINE the Physical-Science Survey starts with a description of the solar system, which of course includes some details of distances and dimensions, but the primary aim is to give the student a picture

of "how the wheels go around" and of the uniformity that exists in the relationships between the various members of the system. Then the logical argument back to first causes and possible explanations of the origin of the system will follow naturally as the next step. After discussing the solar system as a whole, we limit ourselves to the earth as one small part of it in which we are particularly interested. The processes that caused the present surface features such as mountains, valleys, oceans, and continents are discussed. Sedimentary rocks, fossils, the probable age of the earth and how it is determined, the lithosphere and its minerals, the atmosphere with its weather phenomena are studied. These lead us to a discussion of heat and temperature.

Here the general topic of light is introduced which may be considered the central theme for the remainder of the course. The methods of producing particular colors, their significance, and the analysis of light by a spectroscope are described. Why do different chemical elements produce different patterns of colors in their spectra? The answer appears in a discussion of atomic theories all of which is summarized in the periodic classification of the elements. With this as a background a short discussion of acids, bases, and salts as inorganic compounds follows. The carbon compounds with some description of chain and ring series to indicate how new and synthetic compounds may be built up close this chapter.

The knowledge of spectroscopy and atomic theory is now applied in seeing how the sun's composition, temperature, and constitution are determined. The fact that the sun is an average star is shown when other stars which represent some of the extreme cases are described. An attempt is made to get a possible picture of the life history of a star from classifying them according to their spectra. These problems have opened up the question of stellar distances. They are so great! How can one ever measure them? This question is answered by showing the fundamentals of the methods of measuring star distances. Then with a knowledge of the direction and distances of the stars we can draw a picture of the universe that is known to man today. Thus we arrive at the final picture of man's place in the universe, as we know it.

The explanation of principles involved is illustrated by demonstrations, lantern slides, and movies (both silent and sound). Any person familiar with the physical sciences can see that many topics such as sound, electricity and magnetism, quantitative analysis, and many others, are completely omitted. This was done purposely in an attempt to organize a logically developed course in physical science, regardless of departmental barriers, and in order to give a part of it well rather than to attempt a general introductory course that would partially replace the usual elementary courses in each department. The elementary courses have been changed since there are topics covered in the survey course that they need only mention and then go on to spend more time on topics important in their work and omitted

from the survey. Other topics included in the survey will not be met again by the student until he takes some of the more advanced courses in the various departments. We are not interested in giving a "smattering" of so many things that none of them will be retained. Some of the highlights have been picked out and a student who plans to take no further work in the physical sciences has the beginnings of a broad background which will help him appreciate his surroundings and the work of scientists. For the student who plans to go into science as a life work, a general stimulating preview of some of the things he will meet is of value. We try to give him an airplane view of the mountain range first in place of studying the range by exploring individual valleys and canyons on foot. Thus he may be able to keep the grandeur of the large view in mind though he temporarily loses himself in the intensive work of individual exploration later. In other words, we want the student to have some idea of "what it is all about" before he dives into the detailed work ahead.

THE mechanics of conducting the course follow. Seven instructors teach a total of nine sections each semester. These class sections are all small being limited to twenty and usually having about eighteen students in each one. Each instructor takes his one or two sections through the whole course in order to avoid the confusion caused the student by having to meet several different instructors during one course. This is particularly important to the Freshman who is just getting adjusted to college, and it helps the instructors to know the students personally and be of greater assistance when difficulties of any sort arise. A combination of many teaching methods is used in the section. Class discussion is emphasized when possible. Lectures, demonstrations, conducted visits to the geological museum and to the astronomical observatory, and a geological field trip over the college campus are regular parts of the course.

One period is reserved in the college schedule for this course so that all sections may be brought together in an auditorium where talking movies, lecture-demonstrations, or examinations are given. We have found some talking movie films that cover certain topics adequately enough so that we need to take very little class time for these topics. Other topics are illustrated and expanded nicely in the films. When films are not available, or inadequate, we do our own demonstrations and show lantern slides which we have prepared.

Simultaneously with the development of this course, which started in the fall of 1930,[1] we have been experimenting with various types of objective tests in order to develop standard tests that would require thought as well as memory. After weeding out the poorer questions the tests are now in the process of being standardized for convenience in making future comparisons.

To know that we are not dupli-

[1]The first survey course to be introduced at Colgate was the one in Philosophy and Religion which began in the fall of 1928. All five surveys have been in operation since 1930.

cating any quantity of work the students have had in their secondary schools, we have given the same objective tests before and after the course. The better students improved their scores about 100 per cent by taking the course; the median rose about 200 per cent; and the poorer students improved over 600 per cent. The highest score before the course was about the same as the lowest score after the course. [Vol. VI, No. 8]

Some Educational Bookkeeping

By W. P. SHOFSTALL

Rigid Interpretations of Administrative Regulations Which Need Auditing

IF TRANSFER from one institution to another is to be fair to those students making such transfers, admissions officers must challenge some of the rules and regulations set up for them by faculties and admissions boards. In doing this, care must be taken to see that the admissions officers are not so unscientific in their plans as are the current procedures which have made high-grade bookkeepers of some of them. They must seek to prove by experiment the validity of any modifications of present regulations.

When a candidate applies for advanced standing in a college or university, he does not find many of the admissions officials primarily concerned with his ability to do advanced work. This is definitely shown by the information he must present to them, as well as by a study of the reasons for exclusion or for loss of standing or "credit." However, it is found that these officials are working on two general assumptions, both of which may be correct, but which should be challenged and either proved valid or replaced. The two assumptions upon which most admissions officers seem to be operating are: course titles, accompanied by statements regarding sequence, time served, and teachers' marks, give the best available information regarding a student's ability and educational status; and transfer from institutions with curriculums unlike those of the institution to which the student transfers is undesirable.

The present practice, so far as the first assumption is concerned, is best illustrated by the following statements regarding admission for advanced standing selected from typical catalogues of Middle Western universities.

"The student must present an officially certified statement of the college work already accomplished, showing the length of time in attendance, the length of each course in weeks, the number of recitations

or lectures per week, the length of recitations or lectures, the amount of time per week in laboratory courses, and the grade and credit hours secured."

[The statement must include] "his college record, subject by subject, with the grade obtained in each subject and the year in which the course was taken."

At the present time there are few who will contend that requirements based entirely upon courses, credits, sequences, and marks are valid. Yet most colleges and universities continue trying to evaluate a student's education only in terms of such measures.

The direct purpose of this discussion, however, is not to prove the validity or error of present practice, so far as graduation requirements are concerned. The Pennsylvania study, for example, has practically settled this question for us. We know that two students, each with 120 hours, may be more unlike in the knowledge they possess than a high-school graduate and a college graduate. We know there are students without any college credit in history who know more history than some major students in that field. In fact, we know "time served" and "course titles" are inaccurate indicators of both amount and quality of knowledge.

NO ONE is more familiar with the farce and fallacy of the two major assumptions laid down for admissions officials than is the student who may take his first two years in one college and then transfer to another. The problems which arise are quite unbelievable to a person not intimately acquainted with present conditions. In general, he will find that because certain course titles seem desirable, because certain sequences seem necessary, and because a certain ritual is approved in one college, any student transferring to that college must have gone through the same ritual in the same way even though conditions in the college he previously attended may be absolutely different or irrelevant. All this is a perfect illustration of the practice of following a procedure without regard to fundamental principles or conditions. The situation is more clearly illustrated by the following analysis of specific minor assumptions met by students seeking to transfer from one college to another.

1. Course titles are more important than course content.

The student who failed to receive advanced standing in the course in "acting" because the college to which she transferred offered only a course in "dramatic interpretation" is a case in point. Likewise, we have the student in accounting who was able to get credit for this course only after it was established that the course was in the social-science and not the secretarial department. Neither student was questioned about her knowledge. The course title was the only difficulty.

2. The only way to get knowledge is by taking courses.

Consequently, effort is seldom expended to find out how much knowledge the transfer student has. But woe unto him if his record of courses taken is unorthodox. A young Ph.D., who had met rigid requirements for a reading knowledge of two foreign languages, including French, found it impossible to enroll in a library school because he had no "credit" in French. This illustrates

mildly the atrocities committed in the name of this assumption.

3. Courses, which represent the only avenue to education, are so specific in their application to every student that if they are pursued in a certain year they are 100–per cent effective, but if taken in a different year, they are of no value whatever as educational experience.

An example in point is the fact that sociology, economics, and psychology are frequently not accredited if taken in the freshman year. A perplexing situation would have existed for anyone but an "educational bookkeeper" when the student who had taken the first half of her six-hour course in sociology as a Freshman and the second half as a Sophomore presented the course for advanced standing. The only way open to the official was to refuse credit for the second half of the course because the student had no credit for the first half.

4. A course taught in a given college can be of no value to a transfer student if it is not taught in the institution to which he transfers.

The application of this principle is especially noticeable with less commonly offered courses such as "consumers' problems." That is, a student may receive advanced-standing credit for such a course if it is offered by the school to which he transfers; otherwise, the student might as well not have taken the course, so far as credit is concerned.

5. There is a clear-cut line of demarcation between the fourteenth (sophomore) and fifteenth (junior) years.

This was effectively demonstrated to the student who attended two summers in a four-year college before she graduated from her junior college. When she sought transfer to a third institution with 64 hours credit from the junior college and 16 hours from the senior college, she was informed that although all other technical requirements were satisfactory, she could receive no more than 62 hours advanced-standing credit—the maximum allowed from a junior college.

6. The ability of the student to do advanced work is insignificant compared with the fidelity of the student's record to the sacred formulas.

One student, ranking in the upper 7 per cent of her class (teachers' marks and comprehensive examinations being used as bases for ranking), sought a transfer as a junior-college graduate; another student who ranked as barely average according to teachers' marks, and in the lower 16 per cent of her class according to comprehensive examinations, sought admission to the same university. The first student had taken 18 hours of work in survey courses (the university accredited six, but no more). She also had taken during her freshman year, a sophomore course. The second student was interested only in credit and the college degree. Number one had a definite purpose in life and a profound respect for learning. Number two transferred as a full-fledged Junior; number one, as a Sophomore.

WE FIND the bookkeepers in our colleges and universities consistent on at least two points which seem to underlie all these minor assumptions. First, they seem to be little concerned with the individual student's knowledge or his ability to do the advanced work—unless we accept course titles, sequences, time served, and teachers' marks as our best available indicator of ability and knowledge. Instead, they seem primarily interested in making the record of the transfer student fit the pattern of the records of those students who originally

enrolled. This may be interpreted to mean that transfer from one institution to another is undesirable in fact if not generally admitted. This condition is pointed out by Hurt's statement in his Doctor's thesis as early as 1924, and restated in his *1933 College Blue Book* as follows: "The variations in required work for the A.B. degree in the Association of American Universities represents 17,178,652,187,817,120 different combinations before facing electives."[1] Can they all be right? Or, is this just rugged individualism gone rampant? Second, a perusal of present practice quickly convinces one that there has been a widespread willingness to accept these absurd assumptions, and practically no effort to test the wisdom of these practices.

Thus we find the only one of our fundamental institutions which is dedicated to the development of straight thinking, representing, by its practices, faulty reasoning in that those of its officials who see only a bookkeeper's job behave according to rule rather than according to principle.

In conclusion, this discussion does not purpose to be an indictment of our entire system of higher education nor of all its institutions. It does, however, raise questions regarding certain aspects of this system and advise scientific investigation of the assumptions underlying transfer from one institution of higher learning to another. This investigation might take many forms. One of the simplest and perhaps most effective would involve the transfer of a large number of students who do not meet the current technical requirements. The achievement of these students could then be compared with that of a control group of students who followed all the ritual prescribed by the most mechanical bookkeepers. Such a plan is not new nor is it untried, but there is need for a comprehensive program. The result might be a significant and far-reaching change in the interrelationships of higher institutions of learning and an attendant improvement in the educational opportunities of students.

[1]Hurt, Huber William, and Harriett-Jeanne. *The 1933 College Blue Book.* Hollywood by-the Sea, Florida: The College Blue Book, 1933, p. 10.

A Free System of Course Selection

By EDWARD SAFFORD JONES

The Effect of Eliminating Requirements from the Junior College

NEARLY every college in the country requires a moderate number of specific courses to be taken during the junior-college period. The requirements at the present time are much more liberal and flexible than they were even a few years ago, and are justified by most educators since they encourage the acquisition of a broad background of understanding in a variety of fields. Typically, these required subjects have included one or two courses of each of the following: English (literature, composition), foreign language, science, social science; and mathematics and ancient language with frequently one or the other alternative.

The University of Buffalo had held to a program of this type until the last four years. The only exception was in not requiring the last item; that is, neither mathematics nor an ancient language was required, although the majority of students had one or the other because of advice given. The main values presumed to be derived from these requirements were the assurance of a more general cultural background, and the necessity that a student sample various fields so that he might be more ready to choose his final department of specialization. There was some feeling also that the broad selection of courses tended to reduce overlapping of course content, and that the student could not major too early in any one department. This program of required courses is frequently referred to as the "horizontal plan" of junior-college preparation.

About five years ago the University of Buffalo announced its withdrawal from the plan of required courses, and for the past four years there have been no junior-college requirements for any students. The only approach to a requirement is that students must pass a composition-writing examination for the English department to assure that they will not have to take subfreshman English (without credit). If they pass the examination they are not required to take the regular freshman English. The course selections depend mainly on the department in which a student majors during his last two years. These specified courses are framed as suggestions in preparing the student for a vertical type of preparation in the junior-college period, the assumption being that we are more concerned with a student's background and training for usefulness in a particular field or group of departments than we are in his broad cultural training

in all departments. The University has felt that the modern urban high school, particularly, is providing a cultural training of a diversified nature; that students get an opportunity to sample types of courses during this period; and that where the broadening is needed, students often of their own volition will elect courses in college to meet their needs.

The selection of subjects in the junior college by students, therefore, has virtually been a free selection, but guided by statements in the catalogue of suggested courses for preliminary training in various departments, and by the personnel office and registrar's office in assigning students to classes. For example, a student interested in both English and history will be urged to elect those courses on the junior-college level which are advised by both the English and history departments as a basis for later specialization.

THERE are important justifications for the vertical plan of education. In the first place, it was obvious when there were college requirements that many students took courses with the feeling of compulsion and thoroughly disliked them. The courses did not function in their thinking, and in most cases were probably of no lasting value. This is particularly true of mathematics and foreign language, both of which are generally distasteful to people who see no utility in them. Second, it was observed that students required to take a course, for example, science, were quite likely to select the same field, for example, biology, in which they had taken a course in high school. There was no great added cultural benefit, therefore, except in bringing the student a little more up to date in the field. Finally, when students were not required to take courses, the instructors did not feel the dead weight of a large mass of required attenders, and could greatly improve the quality of their work.

With the rearrangement in accordance with the vertical plan of education, courses probably have been strengthened, and even in the freshman and sophomore years many students are thinking in terms of final attainments and the usefulness of tools and information, with reference to senior comprehensive examinations or even more distant goals. Some people frequently have been concerned, however, with the narrowing effect of such a free elective system in the junior college. In spite of cautions and suggestions from administrative offices and the catalogue, many people feel that the effect of such a program is decidedly injurious to a broad preparation for life. We are concerned, therefore, in analyzing the actual situation regarding our students in the past three years, since the free elective system has been well established and understood by all, as compared to a period of from five to seven years ago when the requirements just indicated were in effect. In making this comparison, we selected 100 men and 100 women at random from the earlier group, all of whom were non-professional four-year arts-college students, and as many as were available from the recent group. This amounted

to 68 men and 90 women. It was difficult to secure men from the recent group because of the large number who are definitely preprofessional.

Our major interest was in gross changes that have taken place in the election of courses by students under the conditions stated. Table I presents a summary of all students selecting courses in the three divisions of language-literature, social sciences, and mathematics and science. The

TABLE I

PERCENTAGE OF STUDENTS TAKING COURSES WITHIN VARIOUS DIVISIONAL FIELDS IN JUNIOR COLLEGE

NUMBER OF COURSES	LANGUAGE-LITERATURE		SOCIAL SCIENCE		MATHEMATICS-SCIENCE	
	Men	Women	Men	Women	Men	Women
(1)	(2)	(3)	(4)	(5)	(6)	(7)
No courses—						
Early	.....	.....	4	.....	1	1
Recent	.....	2	.....	2	17	31
One or two courses (1–15 hours)—						
Early	16	4	36	54	25	12
Recent	59	10	44	20	32	55
Three or more courses (15 hours or more)—						
Early	84	96	60	46	74	87
Recent	41	88	56	89	51	14

has been a swing over to the social-science subjects. A part of this swing, no doubt, has nothing to do with the elective system, but is due to the recent interest in economics, psychology, social work, and similar vocational outlets.

There is no such thing as a typical course program, the freshman English being about the only one that nearly every one elects. Those who take no science or mathematics are in nearly every case language or history majors who see no value in it. All the students have had two and a half years of mathematics and one or two of science training in high school. It could be argued that the college training would not add materially to their ultimate vocational value or their pleasure.

few people having no courses in certain divisions during the early period were merely postponing requirements until the junior year of college. It is apparent from this table that the greatest change that has taken place is the increase in the number of students not taking work in the mathematics and physical sciences, particularly in the 31 per cent of recent women. The main change for men has been the decrease in the course work in language and literature. For both groups there

Our second main question grows out of the first. Do those students who take a few courses in college in a particular field also escape similar courses in high school or take the

minimum? Putting it differently: Is there a tendency to make up deficiencies in broad cultural background from high school by taking the right courses in college? Table II briefly records the percentage of students taking no work in college in a particular field who also had no corresponding work in high school, or the very minimum.

It will be seen from Table II that there is only a slight increase in the percentage of people taking no work in college who had had no work, or the minimum amount, in corresponding high-school fields. The only significant increase is in the physical sciences, and in all these cases at least one, and frequently two, sciences have been elected. Students do not tend to remedy deficiencies. They prefer extra concentration in the field of their interest, but also a good selection of departmental courses related to their field of interest. Men, for example, tend to concentrate quite heavily in science, showing a change of from 4 per cent to 27 per cent in the group of those who have taken the maximum number of science courses in high school and three or more college courses. There is a similar concentration in mathematics for men (17 per cent to 26 per cent), and in history for women (5 to 11 per cent). The other fields do not show any increase in concentration.

TABLE II

PERCENTAGE OF STUDENTS TAKING NO WORK IN COLLEGE WITH MINIMUM HIGH-SCHOOL TRAINING

SUBJECT-MATTER FIELDS	EARLY		RECENT	
	Men	Women	Men	Women
(1)	(2)	(3)	(4)	(5)
Physical sciences...	3	22	6	33
History and economics (2 units)..	6	3	3	2
Mathematics (2.5 units).....	27	61	23	66
Modern language...	.....	.....	6	.....
Classics.....	11	7	17	5

THE next question concerns the comparison of the superior students of recent date with average students of that period. One might argue that average and inferior college students may take courses primarily because of their specific interest in the content, as they are not really likely to continue school work later, but that superior students quite certain to take graduate work should have a broader aim in mind. The greatest difference between superior and average students seems to be in the tendency for superior men to take more language work—only 18 per cent take two courses or less, whereas 59 per cent of the average men are taking two courses or less.

There is practically no difference between superior and average women in the choice of their courses, except that superior ones are more likely to concentrate heavily in the language-literature field—55 per cent of superior women compared to 30 per cent of average taking thirty hours of credit in the junior college. There is a tendency for superior men to spread out more than average men, but for superior women to concentrate more—largely due to a stampede away from mathematics and science.

The soundness of course selection should be evaluated in connection

with specialization in the senior college, in individual departments, or in divisional groups. Is the free election system a desirable approach, or is it injurious for the junior-college level in view of ultimate majoring in specific departments? If we can say that a certain amount of breadth is desirable, we should also prefer a substantial background in fields outside the department of specialization but in departments closely related thereto. For example, the physical sciences are so dependent on mathematics that for those who specialize in science, extensive training in mathematics is desirable.

To answer this question we have divided our subject-matter into groups, because of the relatively small number of cases dealt with. In each group, the early as compared to that of recent years, we have designated the average number of hours spent by students finally specializing in a specific field or divisional group, in fields closely related and interdependent upon this specialization, and in fields vocationally related or desirable for background. That is, in the physical-science group it is obvious that mathematics is a closely related, interdependent field, and that philosophy particularly, with some social science, is certain to lead to breadth of scientific understanding. For each major specialization there naturally would be different interdependent fields and a somewhat different grouping of background fields. If there were no other distinctly important background fields, we have included philosophy and social science because of the breadth of influence of philosophy, and because psychology is one of the required education units necessary for all prospective teachers.

In history and economics we have included an entirely different set of background subjects for men as compared to women. Most of the men major in economics, and therefore we have included mathematics and also biology because of the importance of statistics and population problems to economics majors. We have included the language-literature field for the women, since all are majoring in history. It is clear that the third group of background fields is chosen arbitrarily and does not fit every case well, but there was no preliminary bias in the selections.

In striking an average we see that there has been a considerable increase recently in the amount of concentration in special fields or divisions; but furthermore, that there also has been a reasonably significant increase in the number of courses in interdependent fields and in background subjects. The increase is not great, but it is fairly constant throughout. This, we feel, is significant in that it points to the fact that in recent years, under the free election system, students are choosing courses which are not necessarily of immediate value in later department specialization, but which are of ultimate utility in these specializations. In other words, there is a sounder selection of course programs to fit students for future careers.

There is no significant difference in the choice of related fields on the part of superior students as compared to average students. This, however, is

partly because superior students will reach out further into fields that are only dimly related so far as the average student is concerned. For example, science majors take a good deal of work in German to prepare them for graduate reading in German chemistry, while superior English majors may take two or more courses in philosophy.

Under the present system of course selections, entirely free so far as any specific course is concerned, but guided to some extent by catalogue statements of departments and the advice of administrative officers, several changes seem to have taken place. So far as a divisional selection of courses is concerned, there is a marked reduction of science-course selections on the part of women and of language training for men. There is a tendency for all to take more social science. In view of the courses taken by students in high school as well as in college, and the fact that

TABLE III

AVERAGE NUMBER OF HOURS ELECTED ACCORDING TO FIELDS OF SPECIALIZATION

MAJOR FIELD OF SPECIALIZATION	IN DEPARTMENT OF CONCENTRATION		IN CLOSELY RELATED FIELDS			IN BACKGROUND FIELDS		
	Men	Women	Subject	Men	Women	Subject	Men	Women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Chemistry, physics, and geology—								
Early	18	14	Mathematics	14	7	Philosophy biology	13	16
Recent	26	20		12	9	and social science	10	21
Biological science—								
Early	17	16	Physics, chemistry	21	14	Philosophy and so-	6	7
Recent	19	17	mathematics	17	18	cial science	5	14
Mathematics—								
Early	16	16	Physics and chem-	18	8	Philosophy and so-	13	14
Recent	24	13	istry	22	7	cial science	7	15
English—								
Early	14	14	Foreign literature	14	18	Social science and	14	17
Recent	17	14		17	22	history	21	22
Modern language—								
Early	16	19	English and classics	20	18	Social science and	19	13
Recent	31	27		16	19	philosophy	28	14
History and economics—								
Early	16	22	Philosophy, psychol-	13	7	Math., biology or	15	23
Recent	25	20	ogy and sociology	17	14	English literature	21	29
Psychology, sociology, and philosophy—								
Early	13	7	History and econom-	13	9	Biological science	9	11
Recent	29	26	ics	19	10		3	6
Average of all students—								
Early	16	16	.....	16	12	.....	13	14
Recent	24	20	.....	17	14	.....	14	17

nearly every one has a spread of required course fields he must cover in high school, recent students do not seem to have a seriously limited background. That is, there are relatively few who are taking no college courses in a particular field who have also had the minimum high-school work in this same field. Students who have not taken college courses have at least sampled these or similar fields in high school. It is doubtful whether many of them would get much out of college training, unless they are interested, in fields in which they have already studied in high school. Superior men tend to broaden their background of course selection in the junior college by taking more language and social-science training. There is no corresponding tendency on the part of superior women. There has been a strengthening of course selections in closely related fields and in background fields in view of later departmental specialization. That is, our present method of free elections has induced students to select useful and interdependent course offerings somewhat more effectively than was true under the old system. We feel that, all things considered, including an unquestionable increase in the morale of students in that they are not required to take any course which may be distasteful to them, the present program is an improvement; and that whatever disadvantages occur as a result of overspecialization in the junior college, these are counterbalanced by a strengthened background in useful subjects and less compulsion throughout.

Application of Research Results

By CHARLES E. PRALL

Changes at the College Level Which Would Follow

THIS paper will deal with three major types of research findings. The first will be concerned with changes in teaching-learning procedures which are specific to departments; the second will be devoted to single-variable studies which have yielded similar results irrespective of the field; while the third will touch a few of the experiments in the administration of student personnel.

At the outset it is necessary to decide whether to confine attention solely to those studies which have well-supported findings of a consistent character. There have been experiments that have proved nothing, that have had no direct findings from which one might abstract a single unqualified conclusion, but which have had salutary effects upon the participants, and, sometimes, upon the whole course of subsequent investigations. To include these, important though they have been, scarcely would be in keeping with our theme. We are concerned with the lag between positive findings and changed practices, with the volume and importance of those experimentally settled issues which are still to exert their full influence upon the rank and file of college teachers and administrators.

There is no field at the college level which can match the modern languages for continued interest in experimentation, for co-operative experiments in instruction, and for the faithful continuance of novel ensembles of procedures over a period of years. Mr. Henmon, in the *Modern Language Journal*, gave convincing evidence of the activity in this field.

When the Modern Foreign Language Study was initiated in 1925, it was predicted that the importance of the enterprise would lie, not so much in what might be accomplished in the three-year period allotted to it, as in the long line of investigations and researches it would inevitably inaugurate. This prediction has been amply borne out. When I was asked to prepare for the December, 1931, issue of the *American Educational Research Quarterly*, . . . a review of the psychological and experimental literature on the foreign languages, especially for the preceding three years, I found two hundred entries. Moreover, these represented a selection from upwards of four hundred studies, all of which might have been listed but could not be included because of limitations of space.[1]

This unusual volume of experimental studies is no more remarkable

[1] "Recent Developments in the Study of Modern Foreign Language Problems," *Modern Language Journal*, XIX (December, 1934), p. 187.

in its way than the persistence of experimental procedures in the teaching of French, which originated at the Universities of Iowa and Chicago twelve and fourteen years ago, and have continued without loss of interest or prestige during all these years.

ONE of the questions which the Committee on Investigation of the Modern Language Study tried to illuminate was, "What should be the specific objectives of a two-year course, since 85 per cent of the pupils study a language for two years or less?" Mr. Young, who pioneered at the University of Iowa, and Mr. Bond, at the University of Chicago, each felt that the ability to read French should be the main objective, and each embarked upon experimental attacks with the common belief that one could learn best to read by direct reading, with all other skills being subordinated thereto. This involved the abandonment of the old grammar, and the substitution of a much reduced "recognition" type of grammar, the abandonment of the oral, aural, and English-to-French approaches, the utilization of the word and idiom frequency lists of the Modern Language Study for building study lists, an increased emphasis upon verbs, and the careful grading of reading material in order to match the growing abilities of the students. This description is inadequate but will have to suffice; the procedures have not stood still on either campus, but have taken on new features with each year of trial.

Are there evidences which indicate that these direct attacks on the reading objective should be widely followed? The most accessible source of evidence is that gathered by Mr. Cheydleur and reported in Mr. Coleman's *Experiments and Studies in Modern Language Teaching*. Mr. Cheydleur reports an attempt to evaluate the students' attainments in silent reading, vocabulary, and grammar in 47 secondary schools and 70 colleges which use the Eddy-Cochran series of reading books for first-year classes in French. These are the most widely used series of laboratory-prepared materials for the reading attack on French. The instrument used in evaluation was the American Council Alpha French Test, and the method was simply that of comparing the central tendencies for each school on each test with the national norms for students finishing each successive semester of French. The following summary paragraph is well supported by the data.

> To sum up the testing at both the second- and the fourth-semester levels in both schools and colleges, it is quite evident that the median achievement as a whole . . . is superior to the median performance of the country at large. . . . Furthermore, it is also quite clear that there is a decided gain in vocabulary and in silent reading in the face of an evident loss in grammar. However, when we learn . . . that in silent reading the median, the upper quartile, and the lower quartile are all about 34 per cent higher than these same points for the national scores, we may safely conclude that, whatever may be the importance of thorough grammar study in a fully rounded course over an extended period of time, it is possible, without a complete mastery of the rules of syntax, to acquire

in two years of . . . study ability in vocabulary and in reading superior to the national performance at the foregoing critical points of comparison.[2]

At the University of Chicago the first year of modern languages constitutes a terminal course; it acts as a validating course for one- and two-unit entrants in French to the colleges, and it satisfies the modern-language degree requirements of the University. To quote Mr. Bond:

> As a terminal course, the sequence focuses upon an objective within reach of all students and realizable in the 150 fifty-minute recitation periods of its allotment, supplemented by approximately 250 hours of preparatory study. In general, the major aim is the attainment of reading ability in French. . . . Obviously, the attainment of this aim in one year is possible only with the student's active co-operation and interest. It is at this point that a certain amount of re-education enters into the scheme, breaking down the conception of time as a measure of skill, . . . explaining the working details of a language-arts technique, removing language inhibitions, promoting student voluntary reading, and guiding the student in personal, interest-provoking projects.[3]

While the work at Chicago has never been given an experimental evaluation, the reports of the work offer abundant evidences of the success of the plan. The average amount of unassigned reading (voluntary, but subject to report), for each student during the academic years from 1925 to 1928 was 1,184, 1,581, 1,739, and 2,215 pages, respectively. The distribution of subject-matter read in the third quarter of the course in the years 1926, 1927, and 1928 varied from nearly 7,000 pages of literature and 6,000 pages of history, for 78 students, to 249 pages from the medical sciences. Political science, economics, sociology, chemistry, psychology, music, mathematics, geography, geology, physics, philosophy, and botany were included in these non-credit, extensive readings. The most recent report shows that during the last five years 541 students in the three quarters of the beginning course have read and reported on 769,000 pages of French, embracing 1,083 titles and 570 authors.[4]

AT Iowa the earlier years of the reading attack were evaluated by comparison with control groups pursuing the traditional procedure. Each of these comparisons strongly favored the experimental method. At the end of the four years of experimentation, the students completing the second year of French were compared for silent-reading ability with unselected college Sophomores who read translations of the test materials; narrative excerpts of some length from Balzac, Daudet, France, Hugo, and others were selected in such a way that the ability to secure the total impression as well as the supporting details was essential for success. On these measures nearly 60 per cent of

[2]Cheydleur, Frederic D. "Attainment by the 'Reading' Method," *Experiments and Studies in Modern Language Teaching*. Chicago: University of Chicago Press, 1934. pp. 128–29.

[3]Bond, Otto F. "Junior-College Work in Modern Foreign Languages," *The Junior College Curriculum*. Chicago: University of Chicago Press 1929. p. 183.

[4]Rowland, Durbin. "Rate and Quantity in the First Year's Extensive Reading in College French," *Modern Language Journal*, XIX (December, 1934), 191–96.

the two hundred second-year French students read with comparable accuracy and at half the rate with which their associates could read the English versions. This affords a common denominator of reading ability which can be readily interpreted.

Later, Miss Cochran, collaborator with Miss Eddy in the series of books just mentioned, took charge of the work of the first two years and developed individualized techniques by means of which each student could proceed at his own rate of speed and level of ability. Under this arrangement some students required the whole year to do *A* work, some required much less time, some required the whole year to do *C* work, a few were unable to reach the minimum standard set for this mark in the final year, while a growing nucleus, from 10 to 15 per cent, went directly from the first year of intensive work of this sort to the courses commonly offered to third-year students. Such students secured three years of credit for two years of working time.

A recent evaluation of the first year's record of the individualized reading attack showed a slight degree of advancement in reading ability for the group as a whole when compared by common examinations with the previous year's beginners who had been taught by the class method.[5]

Even though these results seem to show that a revamped ensemble of materials and procedures can be effective in developing reading ability to the level necessary for enjoyment, there are many who reject the whole idea and the experimental procedures *in toto*. Coleman has sounded this note in his review of tendencies shown by recent textbooks:

> We may predict [that the intensive "grammar translation" procedure] will continue to survive for many years. Similarly, we may be sure that the detailed oral manipulation of small amounts of material, which has been in favor with most methodologists for the past twenty years, will retain its hold for a long time in many, many modern-language classrooms. We may well fear that our two-year students will learn but little French, or German, or Spanish grammar, but we need never fear that teachers will give up trying to make them learn much. . . . It is, however, more likely that [teachers] will welcome the appearance of texts which [will] make it possible for beginners to read and understand many more pages of French or of Spanish or of German than has been the case in the past, and that under these conditions they will somewhat relax their long-standing assumptions that all reading worthy of the name must be of the careful "study type."[6]

ALTHOUGH the science faculties have been more sympathetic toward measurement and evaluation than many of their associates, a clear-cut advantage for any outstanding change of procedures is seldom reported. Perhaps the delay here has been due to the desire to prove that student and instructor time in individual-laboratory methods can be safely reduced and to the failure to subject some of the newer combinations of class and laboratory to critical evaluation. It will be neces-

[5]Feder, Daniel D. "A Study of Individualized Instruction at the College Level." 1934. An unpublished Doctor's thesis on file in the library of the State University of Iowa.

[6]Coleman, *op. cit.*, pp. 81–82.

sary, then, to use the auxiliaries "may" or "might" in discussing the changes that are indicated as the result of research findings to date.

College experiments attempting to compare the outcomes from individual-laboratory with those from lecture-demonstration methods have been much less convincing than those conducted at the secondary level. Noll, at the University of Minnesota, showed that one hour of recitation per week in freshman chemistry could be substituted for two hours of individual-laboratory per week without loss of accomplishment, when students were carrying three hours of laboratory, three hours of lecture, and one hour of written quiz per week in addition to the mentioned alternative. The substitution of outside readings for the two-hour laboratory differential, however, showed slight losses for the experimental group.[7]

Remmers, in a preliminary report on a two-year experiment in physics at Purdue, has decided that the relative effectiveness of individual-laboratory versus lecture-demonstration is determinate only in terms of the instructors conducting the work. This would seem to be a left-handed thrust at the right of the individual-laboratory to be considered as a necessary adjunct to learning in physics.[8]

Norris and Leighton at the University of Oregon have data which tend to show that the physics laboratory functions well in some respects and adds nothing in others. They used a paired-item technique in such a way that "any new concepts a student obtained or any development which took place between the two testing periods was acquired in the laboratory in connection with the performance of experiments or by self-motivated study during that period." The tests were given at irregular, unannounced intervals, the first generally following such attention to related topics as would normally have been given in the textbook, in the lectures, or during the ten-minute discussion periods which took a part of each lecture hour.

There were evidences that the laboratory procedures aided certain types of specific learnings but failed to have general values. They aided materially in broadening and developing certain concepts, particularly those which could be made concrete in laboratory experiments and those which required the organization of a moderate amount of data. Laboratory procedures also seemed to aid in the acquisition of skills when the application of those skills was measured by problems involving the manipulation of highly specialized data. Problems dealing with the efficiency of motors, the mechanical equivalent of heat, and horse-power development are illustrations in point. On the other hand, little or no benefit seemed to accrue for questions involving an understanding of abstract processes, the application of equations and formulas, and those involving difficult mathematical manipulations. Questions involving novel applications of the principles of physics, in proportion as they were detached

[7] Noll, Victor H. *Laboratory Instruction in the Field of Inorganic Chemistry*. Minneapolis, Minnesota: University of Minnesota Press, 1930. pp. 47-68.
[8] An unpublished report.

from the laboratory experiments, revealed little or no influence from the laboratory. This is, of course, a body blow to the traditional claim for the laboratory, but may be specific to the general psychology of student direction prevailing in physics laboratories.

THIS implication is partially borne out by two studies of the outcomes of laboratory methods in zoölogy, conducted on the same campus by Yocum, Wulzen, and Leighton.[9] Yocum attempted to determine the relative value of different methods of laboratory teaching when the amount and specific nature of laboratory directions were varied. The three sections involved met as one group twice a week for lectures and class work.

The first or traditional laboratory section of twenty-five was given a laboratory syllabus setting forth the details of the procedure to be followed and the purposes of the procedure. They met for a three-hour period weekly, in which the students made individual dissections and drawings, and wrote up the experiments. The second section performed as did the first except that the students were divided into three groups of eight, and each student dissected his own specimens under the direct supervision of the instructor or an assistant. The third section met as did the first and covered the same general ground, except that no supervision or direction of laboratory work was provided. No syllabus was permitted in the laboratory although one was available at other times. Any general directions as to procedure were given outside the laboratory. The students were thus largely dependent upon their own initiative, as affected, of course, by their outside readings and the lectures.

In the final examination, which was a composite of subtests intended to measure different outcomes, the last group divided first honors with the traditional group, excelling those depending on the syllabus in detailed information and ability to organize that information in new situations, and in general information obtained through laboratory procedures, readings, and lectures. The traditional procedure was best for items testing the ability to observe, and those requiring the ability to correlate the information obtained through dissection of one animal with observations made on a new animal. In all other subtests it was the poorest of the three.

Wulzen ran a recheck on the experiment with different pupils, comparing the traditional or syllabus group with a single-hour lecture-demonstration procedure in which pupils were grouped about an instructor at each laboratory table who gave directions and explanations and who had before him the same laboratory equipment and materials as the students, using some for demonstration purposes.

The final examination developed the complete superiority of the single-hour demonstration procedure on measures involving new materials and requiring the organization of principles and information in new situa-

[9] An unpublished report.

tions. These experiments indicate that the traditional laboratory procedures, based upon a syllabus that has been built up because of the nicety with which it fits the subject-matter and standardized laboratory equipment, is easily excelled by more or less opportunistic substitutes, particularly in those outcomes which have long been advanced as the peculiar contributions of the individual laboratory. Those are initiative, ability to adapt to new situations, and other generalized skills and abilities.

A study made under the supervision of Tyler at the Ohio State University promises to have important bearings upon the determination of the objectives for the basic course in zoölogy. Tests were constructed some three years ago which seemed to differentiate to some extent between informational outcomes and scientific outcomes as measured by the ability to draw correct inferences and the ability to apply principles to novel situations. These tests were administered to some ten beginning sections of zoölogy as a pretest. They were repeated at the end of the course and were given again in a comparable form one year later to 87 of the original members who could be assembled and who had not had a course in zoölogy in the interim. In a similar manner, 38 and 12 of the original group took comparable forms of the test two and three years, respectively, from the date of the completion of the course.

The results seem to show both sharp and accumulating losses for the informational outcomes listed under the subheads of naming animal structures, stating functions of structures, terminology, and selection of facts, whereas the items purporting to gauge the scientific outcomes show no loss through the years and, in fact, a slight gain.[10] While much still needs to be done before the results will warrant general application, it seems entirely possible that the objectives of the basic course in zoölogy may have to take account of what can be accomplished in the typical student's single year of study. Fewer principles with broader experiences in application are not inconceivable as directions in which curriculum making will move; it is also indicated that laboratory procedures may have to be differentiated to reach the less specialized objectives of the social-intelligence curriculum.

THE experiments which have attempted to determine the influence of class-size upon educational outcomes have shown a startling unanimity of results. Size of class alone has never been shown to be a significant variable. Some may recall the recent exchange between Charters and Remmers in the JOURNAL OF HIGHER EDUCATION in which the former maintained that the class-size experiments were invalid because the examination criteria did not test all and perhaps not even the most important objectives, and because the teaching procedures were not varied between the larger and the smaller classes.[11] Remmers objected that in the studies at Purdue the faculty members made a great effort

[10] "With the Technicians," JOURNAL OF HIGHER EDUCATION, IV (April, 1933), p. 204.

[11] *See* IV (December, 1933), pp. 468–70.

to adapt the teaching procedures to each group and that the examination criteria were those commonly used for determining the student attainment in the courses in question. He added a significant comment "we are in danger of losing sight of the fact that learning goes on as well as teaching. Given reasonably competent and adequately motivated students, wide variations in teaching procedures might produce similar results."

The interpretation of these experiments must consider the atmosphere in which they originated and certain human factors which have never been given much attention. First, they were conceived as investigations under the same type of single-variable controls as had obtained in the experiments of the laboratory. A moment's reading of the earlier reports will show the meticulous care with which the writers mentioned the high degree of commonality existing in all factors other than the size of class. Second, where instructors might consciously have tried to make extensive variations in subject-matter and procedures, they were subjected to a more or less conscious control growing out of the fact that they were dealing with human beings who at some later date would be appraised by a common examination, determining proficiency in the course, and which would be fair to each group. That this is a regimenting influence scarcely will be denied by anyone who knows how conscientious college faculty members really are, especially those who are willing to submit departmental problems to experimentation.

This appraisal is made independently of experiments conducted at the University of Chicago[12] and at the Ohio State University in which faculty members seemed free to incorporate into the procedures of the small class learning exercises, individual conferences, and training in laboratory skills which were not feasible in the larger groups. The check-up in all of these experiments favored the small class. The differences approached statistical significance in one of the four experiments and were completely significant in the other three.

Experience at Ohio State University with differentiated measures for evaluating class-size experiments seems to be consistent with the interpretations being extended here. Large and small classes in basic courses in zoölogy there have been compared by tests purporting to measure scientific outcomes, verbal information, and information shown in a practical test. The two former types of test differentiation, scientific outcome and information, have been used for five different ensembles of large and small classes, each under a common instructor. The latter has been used but twice. Of the five experiments, four show complete agreement on scientific outcomes and information as to the section favored; that is, where the small section was better on one measure, it was also better on the other; and where the large excelled on one, it also excelled on the other. On the fifth experiment, there was no difference in verbal information, but there was a

[12]Reeves, Floyd; Peik, W. E.; and Russell, John Dale. *Instructional Problems in the University.* Chicago: University of Chicago Press, 1933. pp. 165–77. (University of Chicago Survey, Vol. IV).

difference in favor of the small class on scientific outcomes, which approached statistical significance. There was a tendency, though, for the practical test to show its own pattern, independent of the other two types of measures, and always favoring the small class.[13] It thus fitted in with the test of laboratory skills, already mentioned, which, of course, was much fairer for the small class than for the large. May we generalize from these results: if the measures for past class-size experiments had been differentiated into information, outcomes and application or scientific outcomes, it would not have greatly affected the results. The use of the most refined measures developed to date would probably have changed but few of the recorded outcomes. An evaluation, however, such as Kelley attempted in his measurement of values in algebra,[14] when combined with procedure and subject-matter variables, might have shown interesting variations from the uniformity shown by class-size studies.

In concluding one is tempted to paraphrase Remmers' hypothesis concerning the college level to read, "Given reasonably competent and adequately motivated students, single variations in teaching procedures will generally produce similar results."

Except for its influence upon the staff, which has been by no means negligible, single-variable experiments at the collegiate level have been of little moment. They may be summarized generally by the classic phrase, the results are inconclusive and further experimentation is indicated. It is inconceivable that the modern languages would be where they are today had not certain individuals struck out boldly with a whole ensemble of new procedures, emerging on a level which made comparison with control sections extremely difficult if not entirely beyond the measurer of the period.

FORTUNATELY, educational examining has made great strides in the past decade. There are today at least six or eight institutions where the leaders in educational research are both willing and competent to conduct a critical, non-subjective evaluation of some new experiment without the restrictive curricular and procedure controls which were essential for early measures. Moreover, this is a direction in which a large number of curricular experiments are moving.

The remedial-reading laboratory at the college level has been in existence for over a decade. The early enthusiasm for remedial training as a solution for elimination, low scholarship, and general lack of adjustment has declined in proportion as the sponsors have attempted to work with the lower end of the distribution. Careful evaluations from the Universities of Buffalo and Arkansas, however, show that low groups reach the status of those somewhat more favored when aided by the restraining cause. At Buffalo, the intensive pre-enrollment course enables those high-school

[13] Raths, Louis. "Class Size in the Division of Zoology of the Department of Zoology and Entomology." 1933. A Doctor's thesis on file in the library of Ohio State University.

[14] Kelley, Truman L. "Values in High School Algebra, and Their Measurement," *Teachers College Record*, XXI (May, 1920), pp. 246–90.

graduates in the lowest two-fifths of their classes to excell slightly the middle fifth in success in the work of the freshman year. At Arkansas the single-semester course for Freshmen who have ranked between the 10th- and 30th-percentiles on the psychological examination and below the 12th-percentile in reading ability has made it possible for them to make a better retention record than those students whose initial abilities exempted them from the special work. The grade-point average of the remedial groups has rapidly approached that of those more competent in the freshman examinations. This comparison was based upon the records of 165 retrained students and a similar number of initially superior controls. In passing, it should be remarked that a few of the 50 students annually selected for this work ultimately reach the scholastic level denoted by straight *B* marks.[15] Whether such phenomena would obtain in a state with stronger elementary schools is an open question. It is fair to conclude, though, that this is a service which colleges should render in all states where the common schools have shortened terms and restricted budgets.

Dozens of reports indicate both improvement in reading and growth in scholarship as the result of "how to study" courses for students of average ability but with inefficient study and reading habits. Whether similar results might not be secured by the newer schemes for motivating the student is still unsettled.

SPACE will permit only a reference to the conclusions that are being rapidly fashioned from studies of student success. It is becoming increasingly clear that the high-school curricular pattern has little if any relation to the student's subsequent success in college work. At Chicago the results of a study of high-school specialization and college marks show that, when intelligence is taken into account, high-school and even junior-college preparation in any of the standard academic subjects is about equally good preparation for later college work.[16] Movements are under way at certain institutions, Michigan, Iowa, and several others, to do away with all secondary subject patterns for college entrance.

From studies of the success of students who have been given credit for basic courses and exempted from taking some on the basis of test data, there is emerging a period of reckoning for traditional prerequisites. Those who have been close to students in the capacity of advisers and who know how difficult it is for the student to secure a general education in the average university look forward hopefully to these unexpected sources of deliverance from an ancient evil.

[15]Gerberich, J. R. "Five Years of Experience with a Remedial Reading Course for College Students," *Journal of Experimental Education*, III (September, 1934), pp. 36–41.

[16]Reeves, Floyd W., and Russell, John Dale. *The Admission and Retention of University Students.* Chicago: University of Chicago Press, 1933. pp. 319–37. (University of Chicago Survey, Vol. V).

The Selection of Prospective Teachers

By PAUL V. SANGREN

An Accumulative Record with Co-ordinated Personnel Agencies

CURRENT interest in the problem of the selection of prospective teachers has resulted directly from the numerical imbalance between the supply of teachers and the demand for them. Statements regarding teacher surplus, most of them rather unreliable, have led to the natural and sensible conclusion that one of the best ways to limit production is to raise the quality of the product. More careful study of the supply of teachers now shows the truth to be probably about one-half to one-tenth as severe as the alleged numerical surplusage seemed to imply. Furthermore, such surplus as has existed has been, on the whole, of rather poor quality. In Michigan, for example, reports from 365 school administrators and several teacher-placement bureaus indicate that less than 25 per cent of those available for placement can be recommended. Conditions of this sort impress upon us, on one hand, the insignificance of mere numerical statements regarding surplus and, on the other hand, the absolute necessity of damming up the flow of misfits into the profession. Recent experiences have convinced executive officers that in the interests of both professional and educational welfare, every effort must be exerted to turn out a teacher product that can stand the test of the increasingly critical consumer.

How is the quality of the product to be raised? The space at my disposal does not permit a complete consideration of this complex problem; at best only a rough sketch of the subject can be presented. A thorough and detailed treatment of the question has been prepared by President Baker, of Milwaukee State Teachers College.[1] Although I find it impossible to subscribe to every view expressed therein, I suggest that the chapter by Mr. Baker be studied carefully by those interested in the problem. I shall not report to you the method of teacher selection employed in the institution which I represent because at best I could only say that we are attempting to develop a plan that will work. A number of educators from the Middle West have been meeting frequently at the University of Chicago to study and to develop co-operatively some

[1] "Selective Admission and Promotion," *Yearbook Number XXIII of the National Society of College Teachers of Education.* Chicago: University of Chicago Press, 1935. pp. 16–65.

workable scheme. To date I see no plan that I could recommend for adoption that will meet the standards of fairness, reliability, and practicality.[2]

Mapping out and carrying on a program of selection of prospective teachers brings us face to face with a series of deeply involved and discouragingly complex problems which strongly resist scientific treatment. For example, selection implies that there is to be an abundance of material from which only the most desirable is to be chosen. As a matter of fact, under conditions which some teacher-training institutions have experienced and are even now experiencing, the demand practically blocks the possibility of such selection. In many quarters, the elementary schools, for example, there is no abundance from which to select. Although not absolutely essential, selection, if it is to be effective for the improvement of the profession, involves co-operative adherence to uniformly high standards in all teacher-training and certificating agencies. Such co-operation is new, and by no means easy to obtain in our profession. There is, of course, always the serious difficulty of developing a faculty attitude which will conscientiously support a program of careful selection; no mechanized, centrally administered set of checks and tests alone will result in the production of a greatly improved teacher. Then again, what is teaching success, after all? Who is the good teacher? Are the criteria of successful teaching to be amount of salary, rate of promotion, rating of the supervisor, effectiveness in bringing about growth in school abilities, or power to develop proper social attitudes and habits? What is successful teaching? That is a puzzling question which has concerned selectors of prospective teachers for many years.

Another difficulty is met in determining the factors which contribute to the making of a good teacher. Peik, for example, recommends that "ways and means must be developed to attract and to select persons more carefully for teaching on the basis of such qualifications as health, ethics, scholarship, scientific attitude, breadth of view, mental alertness and personality, and finally ability to develop art and skill in teaching."[3] Others will list additional factors which are present in the good teacher, but no one can say with certainty the extent to which any one of the qualities contributes to the total result. Furthermore, it is definitely unsafe to assume that the devices or schemes employed to measure any one or all of the contributing factors or qualities are wholly reliable. Probably more than in any other field, the instruments available for measuring teaching effectiveness must be considered exceedingly crude and treacherous. Certainly, experience has taught educational officers the extreme danger of fixing standards and norms which are too inflexible; they have been compelled to witness the inaccuracy of their predictions of success or failure too often to run the

[2]Since this article was written, Western State Teachers College (Michigan) has adopted a plan of teacher selection; an outline of it may be obtained by writing to the author.

[3]*National Survey of the Education of Teachers.* Washington, D. C.: Superintendent of Documents, Vol. III, p. 349. (U. S. Office of Education Bulletin, 1933, No. 16)

risk of committing themselves rigidly to scores on tests of low reliability.

Still another troublesome problem in connection with the selection of prospective teachers is involved in the effect of maturity and experience upon the individual. Differences in rates of maturation and the influences of social responsibility and experience so frequently have upset our predictions concerning individual success in teaching that the investigator tends to become extremely cautious. Maturity and experience are factors to be reckoned with that will not easily subject themselves to study during any period of selection of prospective teachers.

EVEN though I might desire to do so, as a representative of a state-supported institution, I cannot commit myself strongly to a policy of selection of prospective teachers at the time of graduation from high school. Private colleges and certain strategically located public institutions may do so; but I am convinced, on the whole, that any artificial or mechanical device which is set up to restrict enrollment in state institutions will not meet with public approval, is not consistent with present education trends, and cannot be defended in case of challenge. We do not run a European system of secondary and higher education in America and probably never will; it will not be possible for us to put into operation a European scheme of teacher selection; and we probably will never want to on any large scale. As a matter of fact, we have committed ourselves, more or less, to the idea that, within reasonable limitations, almost any high-school graduate is entitled to a trial in college and to an extension of this secondary education for at least a couple of years. State teacher-training institutions are not likely to escape that fact even though their tasks might be much easier if they could. Generally speaking, we are going to find the first two years in the teachers' college similar to those in any other college—the period of general education, trial, and guidance. We will not be able to select carefully for teacher training by any process of elimination at the time of entrance. After all, the checking out is the important process, not the checking in. A significant question is, What happens to the student after he is admitted?

On the other hand, there are possibilities of attracting a larger group of good teaching prospects from the high schools than we now obtain. Consider, for example, the qualification of intellectual ability as a condition of entrance. At the present time, teachers' colleges, and most colleges for that matter, attract about the "run of the mine" group from high-school senior classes with nearly all levels of intelligence represented. It has often been shown that there are as many high-school graduates whose intelligence would rank above the 40th-percentile of college Freshmen who are not attending college as there are students enrolled in college altogether. In other words, potentially, it would seem to be possible to double college enrollments and still take only Seniors with intelligence ranking above the

40th-percentile for Freshmen. This suggests an opening for a program of selection in which there would be real merit. If we could bring about such a program (and it would not be surprising if we did), it would give us material from which to select without involving us in a process of questionable elimination.

Still another matter which should demand our attention is an effort to secure from the high schools a better quality of students who have become interested in teaching, because teaching has been made attractive. For one thing better prospects will come into the field when the rewards of teaching deserve it. When high-school counsellors and teachers, themselves, have sufficient personal interest in and respect for their own profession, more desirable candidates will be directed into the field. Let me repeat that one of the real problems in selection of prospective teachers is to have material from which to select.

While the operation of a program of teacher selection at admission should center, in my opinion, largely upon attempts to secure a larger number of desirable prospects from which to select, by all means a thorough and detailed statement covering all types of important information concerning students should be secured before entrance. A reliable study of the individual and an effective program of guidance demand a knowledge of the facts. Many of these facts must be secured from public-school records and tests and examinations at the time of entrance.

With the information available concerning students at the time of entrance, the first two years of college will provide opportunity for careful study and guidance. Information regarding intelligence, health, speech, ability to read and study, personality, nervous and emotional control, scholarship, and such other factors as seem to bear upon teaching success may all be collected during this period. Tests, ratings, interviews, and comprehensive examinations will serve as devices for obtaining the required information, giving the proper guidance, and keeping the student aware of his status. For example, the Psychological Examination prepared by the American Council of Education will serve admirably to obtain information regarding intelligence, the Minnesota Reading Examination will throw light upon the ability to read, the Bernreuter Personality Inventory will aid in the study of personality and mental and emotional temperament, and a system of individual interviews will assist in studying the possibilities and problems of the student. A dozen or more helpful devices of this sort may be used to advantage in this connection. Certain minimum standards may be set up. Probably no student should ever be eliminated on the basis of one factor alone, especially if the presence of other desirable qualities may overbalance it. We can recall too readily examples of individuals who have been markedly successful in spite of one or two apparently severe handicaps: the successful first-grade teacher who has not heard the human voice since the age of twelve, the popular and effective teacher of history who

stutters, and the extremely valuable teacher of physical education in the elementary grades who ranked in the 10th-percentile on the intelligence tests. Experience and common sense will point out the danger of using a single fixed standard for selection. Most of the selection of prospective teachers should take place on a basis of the experience with the student in the first two years. Let the end of the sophomore year be the division point beyond which professional work will be pursued provided the student shows promise.

NO ABSOLUTELY mechanical and fixed barrier, however, should be established between these upper and lower divisions of the college for teacher selection. All border-line or questionable cases should be allowed to go on for a time at least, but none should be guaranteed certification for teaching merely because of entrance into the upper division and participation in professional courses. Further study and guidance of the student should continue during these last two years. For example, additional checks upon scholarship, health, personal development, professional knowledge and skill should be made. At appropriate points tests, examinations, and interviews checking these items deserve special attention. The student, of course, should be kept fully informed at all times regarding his status. It should be possible to graduate the student at the end of four years of work with a degree but minus a teaching certificate if it seems clear that he does not fully deserve certification.

This sketchy discussion of the selection of prospective teachers recognizes the presence of an important educational problem which has resulted largely from a surplus of poorly qualified teachers. It calls attention to many of the difficulties and dangers involved in a program of teacher selection. It does not assume that any widely practical solution of the problem of selection can be made at the time of admission from the high schools except in so far as a larger number of desirable students can be attracted. It advocates setting up a process of teacher selection that will be continuous with primary emphasis upon study during the junior-college level. It suggests the importance of developing a centralized cumulative record system as a basis for guidance and selection. On the other hand, no centralized cumulative record system will take the place of the necessity for co-ordinating all agencies involved in student-personnel work. Clear-cut objectives with the absence of conflicts must characterize the co-ordinated efforts of all persons engaged in the program of advising and selecting prospective teachers. The result must be a fair and just determination of the probable fitness of individuals for teaching, not on the basis of the result of any single measuring instrument, but upon the combined evidence secured from facts accumulated over a period of years.

· *With the* · Technicians ·

The problem, "Should the Number of Professional Students Be Restricted," was discussed by Raymond Walters, chairman of the Committee on Standards of the American Council on Education before the Annual Congress of Medical Education. His consideration of the problem included a statistical summary of the numbers actually engaged in the professions of law, teaching, engineering, and medicine, and the résumé of the opinions regarding such restriction of many persons in each profession who are concerned with the training or placing of students aspiring to each of these professions.[1]

Higher education under state control and through partial state support has been an accepted tenet in American education, but unfortunately in carrying out this responsibility the states too often have been more concerned with the development of individual institutions than with the organization of a well-rounded system of higher education. The facts of duplication of effort presented the predominant problem in the surveys of the five state systems of higher education—Virginia, Oregon, Texas, North Carolina, and Georgia—made between 1928 and 1933 by groups of experts appointed by the United States Office of Education.

[1] *Educational Record*, XVI (October, 1935), pp. 412–32.

Mr. McNeeley, of the Office of Education, recently has gathered together in a pamphlet entitled, *The Problem of Duplication* (U. S. Office of Education Bulletin, 1934, No. 19), the facts of duplication in these state systems, the revisions of organization suggested, and the principles underlying these suggestions.

"Examinations, Old and New"

The age-old faith in the infallibility of the teacher's appraisal of the student's mastery by test and examination has been shattered. This in itself seems good, but it has been replaced by a state of uncertainty and questioning, not only as to the comparative merits of old and new tests, but as to the right and wrong use of tests of any kind. Most college and university teachers are still giving their accustomed forms of examinations, but now with doubt and misgiving.

New tests and testing programs are constantly being presented, but no "clear leading as to how to test or where to test or why to test is given." A new faith is needed to replace the old, a new philosophy of tests and examinations dealing especially with the right use of such instruments and their wrong uses or abuses. Max McConn, of Lehigh University, attempts the formulation of a doctrine of the right use of examinations, whether old

type or new type, by describing the kinds of examinations now in use and by evaluating the different avowed purposes of examinations.[2]

He distinguishes five kinds of examinations, when he classifies them by what they seek to measure:

1. ACHIEVEMENT TESTS. These include: (*a*) the old *essay-type examinations;* (*b*) *problem-type examinations*, used from of old in courses in mathematics and some other subjects; (*c*) *oral examinations*, which have long been in vogue in connection with doctoral dissertations and have recently come to play a part in the Comprehensive Examinations now required for honors or for graduation at many colleges; and (*d*) *objective achievement tests* (new-type), of which the tests prepared by the Cooperative Test Service and those used in the Iowa Every-Pupil Contest may serve as examples.

2. GENERAL INTELLIGENCE TESTS, . . . the Binet-Stanford and Otis tests.

3. APTITUDE TESTS, . . . the Scholastic Aptitude Test given by the College Entrance Examination Board, the American Council on Education Scholastic Aptitude Test, the Seashore Measures of Musical Talent, etc.

4. INTEREST TESTS, of which the Strong Vocational Interest Test is probably the best known.

5. PERSONALITY INVENTORIES AND RATINGS, of many kinds, as different as the Bernreuter Personality Inventory and the Trait Study recently devised by Dr. Eugene Randolph Smith's committee, working under the Progressive Education Association's Commission on the Relation of School and College.

There are a variety of avowed purposes for all these examinations—the daily, weekly, and monthly quizzes; the semester and year examinations; college-entrance examinations; Master's and Doctor's examinations; and professional licensing examinations. The commonest is maintenance of standards; the next is selection. Other supplementary purposes found by Mr. McConn in the literature are to "provide a powerful incentive to study; constitute a method of instruction; stimulate or even enforce improvement of teaching; afford a basis for the appraisal of teachers and departments; provide possible assistance in the accrediting of schools and colleges; furnish data for educational guidance; and accumulate materials for research."

Mr. McConn's summary to this masterly survey of the perplexing problem, which he presents as answers to the question, "What conclusions may be drawn from the facts and considerations presented?" is quoted here:

1. That the great bulk of our present huge examining activity is achievement testing, using mainly the old essay-type examination, and devoted to the combined purposes of standards-enforcement and selection.

2. That the standards thus enforced are excellent and beneficial for one particular type of boy and girl and young man and young woman, namely, those of superior bookish ability.

3. That those same standards, however, because of their uniformity and rigidity, are thwarting and damaging to all other kinds and degrees of capacity.

4. That we need, therefore, to serve these other kinds and degrees, many more, diversified standards, involving new kinds of courses and schools and methods and disciplines and goals.

[2] McConn, Max. "Examinations, Old and New: Their Uses and Abuses," *Educational Record*, XVI (October, 1935), pp. 375–411.

5. That for the demonstration and maintenance of these new diversified standards we shall need a parallel diversification of achievement tests, of improved reliability.

6. That with the development of such diversification, however, the major use of examinations will come to be, not the enforcement of standards, but guidance.

7. That some parts of our present standards-enforcement examining are justifiable, including examinations for professional licensure and for admission, promotion, and graduation in professional schools, endowed colleges, and private secondary and elementary schools.

8. That even in these cases our present standards-enforcing examinations need support and correction from cumulative records of many previous tests and other data in regard to the students' careers.

9. That the enforcement of *uniform* standards in public schools at any level must be condemned; which is merely a corollary of (3) and (4).

10. That the alleged utility of examinations as an incentive to study is largely an illusion and rationalization; at best a minor, incidental value realized only in cases where the goal set is thoroughly appropriate to the students' capacities.

11. That the utility claimed for examinations as a method of instruction can be genuinely realized only when examinations are used specifically for that end and divorced from standards-enforcement.

12. That the utility of examinations for the improvement of teaching is either synonymous with the enforcement of standards or highly dubious; contradicted, in fact, by claims that examinations tend to stultify teaching.

13. That such stultifying effect will, however, tend to disappear as we come to use more comprehensive tests, more diversified standards, and cumulative records.

14. That we have not yet developed the necessary technique for the safe general use of examination results for the appraisal of teachers or departments; but that individual teachers may profitably use such results for self-appraisal and self-diagnosis.

15. That, similarly, testing procedures cannot at present (if ever) be relied upon as the sole basis for the accrediting of schools and colleges, but may constitute a valuable item in accrediting, as contemplated in the North Central Association criteria.

16. That the emergent major utility of examinations is educational guidance.

17. That the developing doctrine of guidance demands, first, diversification of standards and courses and schools, and, second, the general introduction of the methods now available for the study of individuals.

18. That in examining for guidance we need all known kinds of tests, many of them, preferably comparable tests, and preferably tests used explicitly for this purpose.

19. That cumulative records are essential for the summation and interpretation of personnel data, including test results and other relevant information.

20. That the general use of examinations for guidance and of cumulative records will ultimately go far toward solving the problems of admission to college, of professional and other vocational guidance, and of the needed diversification of standards.

An English Test

A most useful test form for measuring knowledge of English usage has been adapted from the Wisconsin Language Test–Gamma by the compilers of the English qualifying examination prepared for the Humanities Division at the University of Chicago.

The scope of the test has been somewhat extended by the use to which it has been put by the Chicago examiners,[3] since the purpose of the battery of tests comprising the English qualifying examination is to test the ability to write with accuracy and clarity. The test is known by the descriptive designation, the "construction shift," and it lends itself readily to the testing of the knowledge of punctuation, of tense sequence, of agreement of subject and verb, and of other grammatical forms, and it can be extended to apply in a similar fashion to almost all the elements of English writing. One group of the many uses to which the test may be put is reproduced here:

1. Punctuation
   a) Apostrophe
   Change all nouns to plural: He was not sure whether he had heard a man's, a woman's or a boy's voice. . . . men's, women's, or boys' voices.
   b) Capitalization
   Omit the word *Amherst:* Three of my friends went to Amherst College. . . . went to college.
   c) Comma and semicolon
   Change *but* to *nevertheless:* You cannot go to the concert, but you can read about it in the newspaper. . . . concert; nevertheless, you . . . or . . . concert. Nevertheless . . .
   d) Direct and indirect discourse [which involves changes in verb form as well as in punctuation]
   Indicate the exact words of the speaker without making any change in their arrangement: He told me that there would be no opportunity of getting into the country for several months.
   He told me, "There will be . . . months," or He told me: "There . . ."

[3] Stalnaker, John M., and Stalnaker, Ruth C. "A 'Construction Shift' English Test," *English Journal* (College Edition), XXIV (October, 1935), pp. 667–73.

This test is simple in form but not objective, since many of the changes may be made in several equally correct forms.

Intelligent clerks, with a few minutes of careful instruction, can grade the exercise accurately. The reliability of scoring is high. In the May, 1933, English qualifying examination at the University of Chicago, the Construction Shift Test of twenty-seven items was scored twice independently on eighty-eight papers. The correlation between the first and second scores was .98. Probably completely objective exercises are rarely scored with greater consistency. The reliability of the test computed by the odd versus even item method (based on one hundred papers from the November, 1934, qualifying examination) was .75. The test had twenty-nine items.

The construction shift test has been used as one section of five different six-hour English qualifying examinations and has been consistently one of the best subtests. The difficulty of the items, expressed as the percentage of correct response, has ranged from 14 to 98 per cent.

The authors, who not only have compiled these tests but have used them in the evaluation of students' proficiency in English, mention several advantages of this test form:

. . . the test is very easy to construct, . . . it is not open to the usual pitfalls of quickly and carelessly constructed objective items, . . . it can be scored more reliably and more easily than the customary long-essay exercises, . . . it

can be adapted to varying levels of difficulty and achievement, and . . . it appears to have a definite relationship to general ability in writing.

The Assistant Editor in Error

In the June issue of the JOURNAL OF HIGHER EDUCATION under the title "Scholarship and Distinction" a résumé of an article by Mr. F. Alexander Magoun from *Technology Review* for May was included in this section. The following letter is self-explanatory:

Dear Miss MacLatchy:

Your great courtesy in sending me the clipping of the June JOURNAL OF HIGHER EDUCATION reprint of my study of "Scholarship and Distinction" is much appreciated. Few editors are so thoughtful.

I do wish that you had published Table I in its entirety instead of merely quoting its last column. The effect thus produced is exactly the opposite of what the study actually shows.

After all, the very beginning of education is to appreciate the difficulty of finding and of accepting truth. Here is a fundamental we need to take seriously, because it has tremendous implications:

Who's Who in America—	Per Cent
Graduates only	
Top decile	22
Bottom decile	9
All students	
Top decile	15
Bottom decile	22

In light of the fact that you were generous enough to print a digest of my article and courteous enough to send me a clipping, the above comment seems indeed ungrateful, which I regret. Authors are an innately cussed bunch anyway!

In compliance with Mr. Magoun's suggestion the percentage columns of the table are reproduced here; the number of men in each group is given at the top of each column.

TABLE I

PERCENTAGE DISTRIBUTION BY SCHOLASTIC DECILES OF FORMER MIT STUDENTS WHOSE NAMES APPEAR IN THE BOOKS LISTED AT THE TOP OF THE COLUMNS[4]

Deciles	*In America** (442 men)	*In Engineering** (759 men)	*Of Science** (515 men)	In All Three (91 men)
(1)	(2)	(3)	(4)	(5)
1....	15.3	16.1	23.8	22.0
2....	13.5	13.6	16.5	14.3
3....	10.2	10.9	13.0	17.6
4....	11.1	11.7	12.0	12.1
5....	5.9	7.9	7.6	6.6
6....	4.3	5.7	5.1	3.3
7....	5.2	5.8	4.5	3.3
8....	6.8	6.8	4.5	6.6
9....	5.9	6.7	4.5	5.5
10....	21.8	14.8	8.5	8.8

*The abbreviations at the tops of the columns indicate the following volumes: Column 2, *Who's Who in America;* Column 3, *Who's Who in Engineering;* Column 4, *American Men of Science.*

The Assistant Editor is most grateful to Mr. Magoun for drawing her attention to the unwise choice made in quoting only the last column of the first table of his article. Editors when in error have only gratitude for the authors who are kind enough to correct them.

[4]Adapted from Table I given in the article by F. Alexander Magoun, entitled "Scholarship and Distinction" in the *Technology Review* for May, 1935, page 305.

·The·Reporter·

THE American Association of University Professors has appointed a committee to investigate the effect of the depression upon higher education. Dean Malcolm Willey, of the University of Minnesota, will conduct the study which has been made possible by a grant from the Carnegie Foundation.

PRINCETON announces a further liberalization of its program by the adoption of a "no-course" plan for advanced Seniors. This new plan will relieve Seniors with high scholastic standings from all classroom requirements during the second term. Such students, therefore, will be able to devote all their time to the preparation of senior theses or to following their own plans of study or research.

THE University of Illinois is permitting students in mathematics, the sciences, and home economics to choose whether or not they desire a Bachelor of Science degree or Bachelor of Arts degree.

DURING early September $5,000,000 came to the University of Michigan for assistance in its program of graduate instruction and research. The gift comes from the Horace H. Rackham and Mary A. Rackham Fund of Detroit and includes $1,000,000 for a new building and equipment and $4,000,000 for permanent endowment. Mr. Rackham, Henry Ford's former partner and attorney, during his lifetime contributed anonymously about $500,000 to the University's work in archaeology and other sciences.

THE administration of St. Mary's College in California is playing with the idea of becoming coeducational. This has aroused considerable opposition on the part of students who are proud of their successful football team and consider St. Mary's to be "the last real stronghold of masculinity in the region."

THE University of Chicago, cooperating with the public schools of the city of Chicago, will offer four seminar courses at its down-town university college for members of the teaching staff of the city schools. The seminars are on the following topics: The School Principalship in Chicago, Curriculum and Instruction in Junior Colleges, The Curriculum, and Educational Measurement.

THE nationally known Outing Club of Dartmouth College is being reorganized, in order that the club may serve alumni, faculty, and the college community, as well as undergraduates.

A PLAN is afoot to combine three of the public institutions of New York, City College, Hunter, and Brooklyn. It is proposed that the new institution be called the University of the City of New York. The President of City

College has refused to comment upon the desirability of such a union; the President of Hunter has said that he is open-minded; and the President of Brooklyn College is vigorously opposed.

THE establishment of the Vanderbilt Foundation, an organization which will seek to make available scholarships and loans for students at Vanderbilt, has been announced by the University. The fund is to be administered by the Executive Committee of the Alumni Association.

LAST year, because of its small registration compared to previous years, Cotner College at Bethany, Nebraska, closed its doors. Early in October of this year professional auctioneers sold the movable property of the college before a group of one thousand buyers and spectators.

TWO women's colleges will observe anniversaries this fall: Bryn Mawr its fiftieth, and Connecticut College its twentieth. The Bryn Mawr celebration, which takes place on November 1 and 2, will center about a series of educational meetings which more than a thousand educators are expected to attend. The Connecticut College anniversary was organized during an early week-end in October about a pageant portraying the beginnings of women's education in Connecticut.

AT THE beginning of the present academic year Princeton University abandoned its system of class cuts. Heretofore, undergraduates were allowed 18 absences during the academic year. From now on the cutting system will be superseded by new regulations which read that "undergraduates are expected to attend all of their scheduled university exercises." The theory behind the new program is that attendance will be determined for any student in relationship to his academic standing and to his good citizenship in the university life.

THIS year Mount Holyoke College will admit a group of twenty special students on a new plan of study to be known as the two-unit plan. These students will pursue an individualized program related to two main subjects and will thus be free from the usual requirements made of regular students. The new plan will permit gifted students from the time of their matriculation as Freshmen to work out for themselves the concentration of courses most likely to fit their individual needs.

THE *New York Times* for October 6 makes a comparison of the registrations of several dozen institutions in the East, South, Middle West, and West between 1934 and 1935. The Eastern institutions have a 3.3 per cent gain over last year, the Southern institutions a gain of 7.7 per cent, and the Middle-West and Western institutions combined, a gain of 10.6 per cent. The largest increases are reported at Bennington College with an increase of 21 per cent (from 219 to 265 students); Davis Agricultural College of the University of California, 52.9 per cent (from 505 to

772 students); Purdue University, 18.7 per cent (from 3,937 to 4,675 students); and Ohio State University 16.9 per cent (from 9,478 to 11,082 students).

On November 14, 15, and 16 the Southwestern Conference on Higher Education will convene at the University of Oklahoma. Some two score addresses and discussions are listed on these general topics: Higher Education, Its Relation to Society; Higher Education, Its Provinces and Organization; Higher Education and the Control of Physical Environment; Higher Education and the Control of Social Environment; Higher Education and the Training of the Social Technician; Higher Education and the Creative Arts; and Higher Education and the Society of Tomorrow. Among the speakers will be leaders of many divisions of educational thought.

A new college has been organized at Santa Barbara, California, with the specific objective of training leaders for self-help co-operatives. The students spend their afternoons working in the various sections of the Santa Barbara County Co-operative Industries, local self-help enterprise, which has more than one thousand members. Courses in music, art and literature, public and private health, psychology of leadership, and other branches of social science will supplement the technical studies.

A greenhouse for teaching and for research in plant hormones at Connecticut College is almost completed. It has been built from a grant of $10,000 by the Rockefeller Foundation, a supplementary gift of $5,250 from Mr. A. C. Ernst of Cleveland who has two daughters in college, and additional gifts from other friends. It consists of a heavily insulated underground laboratory with controlled conditions of temperature, humidity, and light, and four greenhouse compartments above ground. It is already in use, in charge of George S. Avery, Paul R. Burkholder, and Harriet Creighton of the Department of Botany.

New requirements have been announced by the University of Virginia for the degrees of Bachelor of Science and Bachelor of Arts to take effect in 1936–37. Candidates for the latter degree must offer two courses in Greek or Latin, and candidates for the former degree must offer two courses in French or German. Not less than six of the eight required courses must be completed at least two years before graduation, and all must be completed at least one year before graduation. Twenty three-hour courses are required for the degree, and a student is normally expected to carry five courses a year. Majors must be selected at the beginning of the junior year.

A new Division of General Studies of the Yale Graduate School has opened this fall with 13 students. The Division is blazing a new trail in graduate education since it seeks to meet the needs of individuals who do not desire the Ph.D. degree but who wish to ground themselves in scholarly

work. The course schedule is thus entirely individual depending on the student's particular needs. Of the 13 students all but two occupy important professional positions, and one is a well-known professional writer who has published several successful books on current problems. He will make use of the advanced seminars of the graduate school to improve his knowledge in the special fields of banking and international relations. He will continue with his own writing during his stay at Yale.

THREE improvements are announced by Cornell University in its College of Arts and Sciences. The Freshmen of high standing next year will be permitted to take examinations at the end of the first term for extra credit in any course in which they are registered. Successful passing of such examinations will give them a full year's credit in that course. Also, Freshmen upon entrance will be permitted to try special examinations for extra credit in a group of subjects regardless of whether or not they have been offered for entrance. Freshmen will be permitted to try for advanced credit in any subject offered at Cornell whether or not they have formally passed it in their secondary schools, provided that they can demonstrate by examination sufficient evidence of mastery to the department concerned.

THE John Price Jones Corporation has just now announced the results of a survey recently completed on gifts and bequests to colleges and universities. They discovered that between the years of 1930 and 1933 gifts and bequests dropped sharply, but that during 1934 the decline was much less marked. Money and property amounting to more than $165,486,000 were received by the institutions during the academic years beginning with the fall of 1930, it was said. The list included 27 of the 47 colleges or universities in the country having endowments of more than $5,000,000. The yearly figures were: 1930–31, $74,456,326; 1931–32, $45,817,176; 1932–33, $24,555,021, and 1933–34, $20,657,891. An upturn was reported from the eight women's institutions studied. They received $1,086,171 in 1933–34, against $980,281 during the previous year.

The institutions included in the report are the Carnegie Institute of Technology, University of California, Dartmouth, Columbia, University of Chicago, Cornell, Hampton Institute, Harvard, Haverford, Johns Hopkins, Lehigh, Massachusetts Institute of Technology, Minnesota, New York University, Oberlin, Pennsylvania, Princeton, Rutgers, Stanford, Virginia, Western Reserve, Williams, Yale, Barnard, Bryn Mawr, Mount Holyoke, Radcliffe, Rutgers (women), Smith, Vassar, and Wellesley.

AN EVENT of large importance to American higher education will be the celebration of the Harvard Tercentenary during the summer and fall of 1936. At the Harvard Commencement in June President Conant described the general plans for the celebration as follows:

The actual celebration [of the Tercentenary], which must mean so much to

all Harvard men, will be held on September 17 and 18. Preceding this, however, there will be a series of events which, I hope, will have significance for all who are interested in higher education. There will be a number of symposia, to take part in which a very distinguished company of scholars will be assembled from all over the world. Some of these meetings will be for small groups of specialists; others will have a much wider appeal. In addition there will be several public lectures. For at least a month before the final celebration the whole University will be "on view" to the general public. Every possible attention will be paid to exhibiting to all who are interested the many aspects of our large educational plant. Special guides will conduct visitors to all parts of the University, and many things of interest not usually accessible will be open to all. We hope that many who have no connection with Harvard will avail themselves of this opportunity to become better acquainted with a large university and thus come to understand what is being done in education and research for the benefit of the whole country.

The significance of our celebration is clearly much greater than the mere rejoicing of the Harvard family at its three hundredth birthday. It is the beginning of higher education in this country that we are commemorating, and this particular University is now but one unit in a vast and widespread structure that has grown from our own simple origin.[2]

IN SOME 16 states, college teachers, along with their fellows in the lower schools, are now required by state law to take a teacher's oath. One of these states is Massachusetts where an active protest has developed.

[2] "On Commencement Day, *Harvard Alumni Bulletin*, XXXVII (July 5, 1935)", p. 1131.

At the time the Massachusetts Bill was proposed, educational leaders of the state, including President Conant of Harvard, and President Compton of Massachusetts Institute of Technology, protested vigorously; but upon the passage of the bill requiring the oath, President Conant ruled that the 1,800 members of the faculty of Harvard University would be required to comply with the law or resign. He observed that it is out of the question for Harvard University as an institution to consider not obeying the law.

An outstanding member of the Harvard faculty, Kirtley F. Mather, decided that while complying he would set about to work for the discredit, and perhaps the repeal, of the measure. A few days previous to his announcement that he would comply, Mr. Mather in a public meeting denounced the bill, and castigated its author who was present at the meeting.

FIVE members of the Senate of Wisconsin recently have submitted a report to the legislature expressing the opinion that the University of Wisconsin is "an ultra-liberal institution in which communistic teachings are encouraged and where avowed communists are welcome." The Committee submitted four recommendations:

1. That hereafter the Board of Regents of the University and the boards of other state educational institutions frown upon the activities of all societies not clearly organized as American societies under the Constitution, and any society organized with the intent or purpose, full or in part, to change by

force or overthrow the Constitution, or the American form of government; that individuals or societies offering or expounding un-American doctrines be expelled from the university or other state educational institutions, or refused their facilities.

2. That the University of Wisconsin co-operate with any organization or society whose purpose is the furtherance of Americanism.
3. That constant vigilance be maintained so that the University will promote and co-operate in every effort to secure full and complete information as to anti-Americanism activities to the end that the name and prestige of the University, as a strictly American institution of high ideals and purposes, may be known and recognized in Wisconsin and in the nation.
4. That the board of regents prevent with strict disciplinary action the efforts of any member or groups in any department to undermine the position or character of any individual, or take part in inter-institutional political maneuvering.

All five Senators signed the report, but one member observed that the recommendations were "not nearly strong enough." He particularly felt that the conclusions of the Committee which specifically criticize President Frank and E. A. Ross of the Sociology Department were in need of strengthening.

Administrative Changes

Administrative changes in colleges and universities of the country during the past month have been reported as follows:

J. Duncan Spaeth has been elected President of the University of Kansas City, resigning from his professorship of English at Princeton University. He will not assume his new duties until September, 1936.

Rev. Clark R. Yost has accepted the presidency of McKendree College, succeeding Rev. Cameron Harmon who has resigned after a twelve years' incumbency.

D. S. Rosenberger has been elected President of Bluffton College succeeding S. K. Mosiman who has resigned after twenty-seven years of service.

A. B. Butts, vice-president of Mississippi State College, has been named Chancellor of the University of Mississippi, succeeding Alfred Hume, retired. Mr. Butts was formally installed in office on October 19.

A. E. Morgan has been appointed Chancellor of McGill University, coming from the presidency of University College, Hull, England.

William Otis Hotchkiss has assumed the presidency of Rensselaer Polytechnic Institute, succeeding the late Palmer Chamberlaine Ricketts.

Eugene S. Briggs has become President of Christian College, Columbia, Missouri, succeeding Edgar D. Lee, resigned.

Frank L. Martin succeeds the late Walter Williams as Dean of the School of Journalism at the University of Missouri.

L. N. Duncan has been elevated from directorship of the Agricultural Extension Service to the presidency of the Alabama Polytechnic Institute.

Charles Burt Gentry has been appointed Acting President of Connecticut State College, succeeding C. C. McCracken, who has resigned recently to become the Educational Counselor of the Presbyterian Board of Christian Education.

Thomas Stockham Baker on September 17 announced his retirement from the presidency of Carnegie Institute of Technology after thirteen years as head of that institution.

· Editorial · Comments ·

Utilization of College Buildings and Equipment

DURING the past five years few funds have been available for capital outlay in colleges and universities. Enrollments were declining, however, during the early part of that period, so there was not the usual demand for additional physical facilities other than those for replacement of inadequate buildings and worn out and outmoded equipment. With the increases in enrollments, which rather generally began last year, the plant program has again become a live issue.

As evidence of the decline in expenditures for capital outlay during the period just referred to, a study was made last spring of such expenditures in six large state-supported universities covering a ten-year period. Taking the group as a whole, and using 1930–31 as the base year, it was found that the expenditures for those purposes in 1931–32, 1932–33, and 1933–34 were 54 per cent, 10 per cent, and 8 per cent, respectively, of the base year 1930–31. During that period some institutions availed themselves of the provisions of the Public Works Program, but this practice was followed to no appreciable extent because of the difficulty of raising the part required locally for such participation.

With the increased enrollments and little money for plant extension, attention has been turned to the next alternative, namely, a study of the use of the present plant to see if it might be revamped to provide the needed physical facilities. The purpose here is but to state briefly the efforts to meet the building situation in Ohio State University as a result of the largest enrollment in the history of the institution, an enrollment which this year is thirteen hundred greater than last year and two thousand greater than in 1933–34.

Last year in one building, the College of Education, the congestion was so acute that something had to be done. As a first step in this, a detailed study of the actual hour by hour use of all space in the building for a three-day period was made. The results of this were illuminating. For example, it was found that the net floor space, exclusive of equipment, per occupant in offices occupied by staff members of the rank of instructor or above ranged from 29 to 459 square feet. With these data as a basis, a committee which included among others the University architect, was appointed to study the problem further. After an extended analysis of the situation, the committee drew up a plan which, at a cost of $12,000, would not only satisfactorily provide for the load of last year, but would care for twelve additional persons who came at the beginning of this year to carry on a research project. Unfortunately, vetoes of the maintenance appropria-

tion have thus far prevented the carrying out of this plan.

Using the same techniques, six other large buildings were studied over a five-day period last year. In these, wide variations were found in the use of offices, laboratories, and classrooms. One of the difficulties in this method was the fact that the use of space varies widely with quarters. For example, in one of these buildings there were several large laboratories not used at all during certain quarters. To meet this, and to provide for continuous study of the use of the University plant, the President has set up a Committee on Permanent Survey, and employed a full-time person to carry on the work of this committee. It is the belief that this plan should function not only in securing better utilization of the University's plant and equipment, but should be the basis for determining where there is the greatest need for new buildings and equipment. Also, questions of policy with reference to length of day, afternoon and Saturday classes, and other related problems enter into the considerations of plant and equipment use.

T. C. Holy
Bureau of Educational Research

··Reviews··

Trained Public Servants

GOVERNMENT CAREER SERVICE, *by Leonard D. White.* Chicago: University of Chicago Press, 1935. xiii+99 pp. (University of Chicago Studies in Public Administration, Vol. 3) $1.50.

The growing attention paid by college men and women to government service as a career is a recent development of marked educational and social significance. As an occupational trend, it parallels the shift toward the social sciences, in students' areas of concentration, which has been widely noted in educational circles. Consequently this volume, comprising five lectures recently delivered at the University of Chicago by Leonard D. White, of the United States Civil Service Commission, deals with a topic of timely interest to many college students, their teachers, and advisors.

Mr. White presents in compact and clear form his program for the development of a career service, on a truly professional plane, in our national government. He pays due tribute to the Report of the Commission of Inquiry on Public Service Personnel also published this year, and quotes freely from that admirable document. He adds to its recommendations, however, concrete and specific proposals, drawn from his own wide knowledge and experience. Both this Report, entitled *Better Government Personnel*, and Mr. White's volume on *Government Career Service* are "required reading" for anyone interested either selfishly or vicariously in this important topic.

While idealistic in their outlook, Mr. White's lectures are also refreshingly definite and practical. Here is no mere wishful thinking of a social utopian, but the well-reasoned suggestions of a man who knows his job, realizes the problems confronting his program, and is prepared to meet them.

The Commissioner opens his discussion with an historical survey of the public service in this country, and of the conflict between early traditions favoring a non-political merit system of Federal appointments and the later frank emergence of the spoils system. This is followed by informative chapters on the actual organization problems of a career service, the conditions under which people would work, what they would do, and how rigorous standards of selective promotion could be instituted therein. He emphasizes cogently the need within the administrative corps of the government, for career opportunities analogous to those in the Army, the Navy, and the Foreign Service. He illustrates the advantages of replacing present departmental segregation of personnel by the establishment of "functional areas"—clusters of related departments—within which the advancement of able public servants may be facilitated by their transfer from one special branch to another. Promotion should come through operation of a consistent process of selection, determined strictly by merit rather than by seniority or political influence—in short, as he says "career posts for career men!" In the long run, Mr. White argues that the government can better rely upon a permanent staff of trained public servants as its administrators, than upon the sporadic recruitment of "dollar-a-year-men" or "brain-trusters."

At the same time, he clearly and emphatically distinguishes between, on the one hand, special responsibilities to the electorate of its political representatives in office, who must shape the policies of successive administrations and maintain their allegiance to party principles, and, on the other hand, the technical and advisory duties of the permanent civil-service staff. As in England and other countries where democratic

principles of government prevail, the political or social philosophy of the individual public servant need in no way impair his administrative usefulness or loyalty to the particular administration in power. His obligation to render the best and most objective professional service of which he is capable, should be just as clearly recognized as is the lawyer's, the doctor's, or the engineer's. And when the government offers a continuous opportunity, adequately rewarding service of that character and protecting it against the vagaries of partisanship or political favor, Mr. White has no doubt that men and women of the first rank will enter this career.

Under those conditions many of the ablest college and university graduates will be attracted directly into government service as their life work; and of these a substantial proportion will bring it training on the highest graduate and professional levels, in economics, in business operations, in science, in personnel management, such as will fit them for fundamental research in the problems of government, as well as for administrative responsibilities. As evidence of this possibility, he cites among other data the fact that "over 9,000 college graduates from every state in the union filed" for an examination held in 1934, to select candidates for the post of junior civil-service examiner.

Mr. White is careful to indicate that the plans for instituting true career opportunities in government, and thus eventually strengthening the capabilities of the civil service and raising its prestige, will help rather than threaten the status of personnel already in the service. Replacing "pigeonholes" by "ladders of promotion" should facilitate advancement for the many able incumbents of present positions. He outlines concretely a schedule for the training and promotion of these as well as of new recruits, and summarizes the steps during a five-year "training-grade" period and successive promotional stages, suggesting age and salary ranges for each level. By numerous examples of existing practice and functions he makes this program appear practically realizable "by relatively slight alterations in our plan or organization," without impairment to the rights of existing personnel or interference with the recognized freedom of political action in its proper place.

The immediate importance of such changes, on which all serious and disinterested authorities seem in agreement, is manifest. That the complexity of our economic and social problems has become so great, that their solution and the preservation of our present order alike depend upon the wise and active cooperation of the government with industry, are probably accepted today by conservatives as well as by liberals. Certainly, the government is now engaged in a host of activities which show how far we have come since Andrew Jackson conceived the duties of public office as "so plain and simple that any man of moderate intelligence may readily qualify himself for their performance." In fact, as Mr. White warns: "Unless we have assurance of a better civil service than that to which we have been accustomed, it is perilous, to say the least, to embark upon a broad program of social reorganization which rests primarily upon the activity of government." Also, he warns, if we do not establish "a recognized career comparable to the careers which can be found in the universities, in the professions, and in the business world, the best men will go elsewhere and government will get exactly what it deserves."

That our public service can be put upon the same high plane as that of numerous other nations, and can thus rise to meet the present-day challenge to government, Mr. White believes to be readily possible. And he adds "It will be little short of a calamity if this creative movement in our national history cannot thus be turned to good account." In a volume of less than a hundred pages, but full of meat, Mr. White has clearly and courageously pointed the way toward that objective.

ALBERT B. CRAWFORD
Yale University

Appraisal of Teachers

LETTERS OF RECOMMENDATION, *by Lloyd N. Morrisett*. New York: Teachers College, Columbia University, 1935. viii+205 pp. (Teachers College, Columbia University, Contributions to Education, No. 641) $2.00.

Education has not yet developed reliable measures for the prediction of teaching success, nor has it established definite standards of good teaching that can be measured accurately and reported objectively and comprehensibly to typical employing officials. Consequently, that very subjective device, the letter of recommendation, is still the most used instrument in the selection and placement of teachers. Any careful analysis of the device and its use is certain to be of significance to teacher-college administrators, placement officers, and schools employing officials.

Morrisett analyzed 1,851 letters of recommendation which had been written since 1928 for prospective or active secondary-school teachers by principals, superintendents, college teachers of academic and professional courses and laymen from all sections of the United States. He was interested in what was written by each type of writer and how their points of emphasis varied; in what employing officials wanted to know about candidates and from whom they preferred to receive the information; in the opinions of school officials regarding the functions of letters of recommendation and their criticism of how those functions were served by the various groups of writers and the several types of testimonials; and in the ethical principles followed by school men in writing recommendations for secondary-school teachers. The results in each of the several aspects of the study, expressed in frequency percentages and correlation coefficients (rho), give a clear-cut account of current practice and opinion. Each division of the study is followed by a summary, with interpretations, which places the findings before the busy official in convenient form. The analyses and interpretations are well done.

The treatment of the ethical principles is less adequate than other portions of the study. The number of the responses, in the reviewer's opinion, is too small to give a sound basis for the series of ethical principles derived from them. The treatment does, however, suggest a worth-while field for further research.

The fundamental problem of validity of statements in letters of recommendation was barely touched. The twin problems of reliability were likewise treated only superficially. Their importance might have been stressed more. When a school official writes that a certain teacher is superior, how can the reader of the recommendation be certain that he is speaking his true mind; and if one eventually decides that the writer has been honest, how can one know that the writer has had ample opportunity to observe the teacher in question, or that he is capable of recognizing superior teaching when he sees it? These pertinent and basic problems were not seriously attacked in this study. Until they are squarely faced and solved much of the effort spent in studying letters of recommendation is certain to be lost motion.

J. G. UMSTATTD
University of Minnesota

A Fair Statement

SOCIAL CHANGE AND EDUCATION, Thirteenth Yearbook of the Department of Superintendence of the National Education Association. Washington, D. C.: National Education Association, 1935. 383 pp. $2.00.

One could almost review this book from its frontispiece. It shows a huge mechanical man, a blockhead but very powerful, shoving two human figures, a man and a woman. The human figures are blind and their hands groping. The robot's mechanical hands are in the small of their backs, and their only power seems to come from him. The picture is a reproduction of the central sculpture of the Fountain of Science at the Century of Progress, and is entitled, "Science

Advancing Mankind." The writers of the fifteen chapters in this book discuss this notion about man: Is he helpless in the hands of the great machine he has created? A majority (thank heaven!) believe that man created the machine and may control it. If man does not control it, it will destroy him. They hold that it is the educator's job to teach the coming generation how to control that machine and direct its work. Or better, how to make the machine their servant and not their master.

The book was conceived in 1932 as an attempt on the part of educators to deal with social and economic issues and their implications for public education. In the course of its preparation it became apparent that educators, like the rest of mankind, were not agreed as to the implications of the social and economic trends. Nevertheless, they decided to produce the book on the assumption that the very differences of opinion sincerely stated and presented with supporting data would be a genuine contribution to thought in these troubled times. They did well. It would be hard to find in briefer compass a fairer statement of social and economic conditions or a more thoughtful interpretation of them.

The first seven chapters in signed articles by Deibler of Northwestern, Bryson of Teachers College, Edmundson of the University of Michigan, and Wooddy of Des Moines present the trends. Mr. Wooddy's summary alone is worth the price of the book. The next eight chapters interpret these trends and their meaning for the education of children, youth, and adults. Here there is a much greater difference of opinion. The authors of these chapters are Childs and Newlon of Teachers College, Theisen of Milwaukee, Ballou and Kelly of Washington, D. C., McClure of Seattle, and Studebaker, the United States Commissioner of Education. Mr. Childs concludes his "Preface to a New Philosophy of Education" with a paragraph containing a sentence which seems to be the nub of the matter: "It becomes increasingly apparent that laissez faire capitalism and social democracy are incompatible." He favors social democracy and insists that the educational statesman can and should have a share in preserving it and directing its future. While all of the others have not faced so squarely this choice, the thoughtful changes they propose fit well into his program. The last hundred pages are devoted to the usual official records.

To this reviewer, a teacher not in the public-school system, the book seems one of the most hopeful signs in public education. Educational statesmen will read and discuss it. Lesser fry will feel that they cannot be bothered.

FRED EASTMAN
Chicago Theological Seminary

A Centennial Volume

WOMAN'S EDUCATION BEGINS: THE RISE OF THE WOMEN'S COLLEGES, by *Louise Schutz Boas*. Norton, Massachusetts: Wheaton College Press, 1935. xi+295 pp. $2.00.

This volume, published in the centennial year of the founding of Wheaton Female Seminary (which became a college in 1912), presents in successive chapters a discussion of colleges for men and seminaries for ladies, educated woman and her place, the religious basis of American life, the curriculum, and colleges for women. There is a brief index and a bibliography. The book is partly but inadequately documented.

The title of the volume arouses expectations which it does not satisfy. Basically, the failure seems traceable to the fact that the central purpose of the book is not clearly conceived and consistently followed. It ranges from broad generalizations about woman's education in the United States to detailed references to Wheaton Female Seminary. Had a continuous full-length history of Wheaton been given, the value of the book would be greater. As it is, the major part of the text being a rather general treatment, it is something of a surprise to the reader to be referred so often to what was happening at Norton. There is still

place for a reliable, well-documented history of Wheaton.

What has been said of the failure to portray satisfactorily the origin and development of the particular institution in which the author is specially interested, is equally, perhaps even more, true of the book, if one examines it from the standpoint of a general account of the beginning and progress of woman's education in the United States. A book that attempts to help us "understand the social conditions which brought about the education of women" should, just to mention two things, give considerable attention to significant beginnings in the eighteenth century, and it ought to survey impartially the development of educational institutions inside and outside of New England.

At many points, informed readers will be disturbed by broad generalizations for which there is inadequate authority or none, and the uninformed may be confused and misled. Thus, to cite a few examples: "in these states [Massachusetts and New York] the most prominent educators lived and worked" (p. viii); Moravians and Friends established schools in the eighteenth century, but "they served their own groups rather than the public at large" (p. viii); practically "all native Americans" signed their names in the eighteen-thirties, in contrast to the "larger number" who "made a cross at the time of the Revolution" (p. 175); "mental arithmetic was given an important place in the curriculum of all schools" (p. 176); "these mothers of the early nineteenth century were the true pioneers of woman's education" (p. 99); " 'seminary' was the name given to colleges" (p. 6). With respect to this discussion of seminary and college, it should be remembered that though colleges were frequently referred to as seminaries of learning, leaders in the movement for woman's education, such as Willard, Beecher, Graves, Pierce, and others, were well acquainted with the fact that female seminaries were quite different from regularly established and approved colleges. The chapter entitled "Colleges for Men; Seminaries for Ladies" gives the impression, whether intentional or not, that the chief, if not only, difference between college and seminary was the name. Had this been true, the whole fifty-year movement to improve seminaries and academies, so that they might become worthy to grant the A.B. degree and to establish outright new institutions on a clearly recognized collegiate basis, would be meaningless.

THOMAS WOODY
University of Pennsylvania

A Glorious Hundred Years

A PIONEER COLLEGE: THE STORY OF MARIETTA, *by Arthur G. Beach.* Marietta, Ohio: Privately printed by Marietta College, 1935. xiv+325 pp. $2.50.

The Muskingum valley early attracted the attention of American educators. In 1769 it was one of the numerous sites suggested for Wheelock's Indian Charity School, afterwards Dartmouth College, one wisely rejected by its leader on account of its superabundance of warlike Indians who bade fair to make a sudden end both of school and Wheelock. To this region in 1773, however, he sent two of his white missionaries, whose high hopes of Indian conversions were sadly disappointed by the recalcitrant nature of the savages. Fortified by the Ordinance of 1787 and by a grant of a million and a half acres of land to the Ohio Associates, here in 1787 came Colonel Rufus Putnam with a group of New England settlers to perpetuate in a new country the civic and moral order native to them. Characteristically, in the following year, they founded, as among the first of their institutions, Muskingum Academy, which in 1832, became the Marietta Collegiate Institute and in 1835 Marietta College with full degree-granting rights. That institution, therefore, is this year celebrating its centenary, and it is in connection with this centenary that this book is written.

The influence of the New England college has been all-powerful with Marietta.

It was planted in a region peopled by those of New England birth or ancestry. Its first president and all his faculty were graduates of New England colleges. Much of the scanty endowment of its early years was obtained in New England. Its outlook, its purpose, and its methods were those of the New England college. Although like some of them it was non-sectarian, like all of them it was thoroughly "Christian" with a sternly Puritan bias. Six of its eight presidents have sprung from New England institutions. Only in two particulars has it tended to diverge from its models. The name Marietta, derived from Queen Marie Antoinette, who, at the time the name was given to the town, was the gay and frivolous queen of France, hardly had a Puritan implication, although her later history was sufficiently gloomy to edify the soberest of dissenters. And in recent years the fall of the college from grace in its introduction of coeducation, though placing it in line with the educational trend of the country as a whole, has caused it to deviate largely from the ideals of its progenitors.

Like its prototypes the story of Marietta is largely that of a struggle against restricted means. Always a small college, for the greater part of its history its balance sheet at the end of each year has shown a discouraging deficit, which at times has called for heroic remedies. To contend against this condition it has had two assets: First, its trustees, many of them of remarkably long terms of service, have been endlessly devoted to their responsibilities, lavishing time, service and, so far as they were able, money upon the institution. Second, the teachers, of unusually high intellectual competence, have labored as diligently along scholastic lines as have the trustees with their material cares, and this despite a scale of compensation usually inadequate and at times pitifully scant. These men have so built themselves into the institution that, despite its material handicaps, from an educational point of view it has at all times been strong, sturdy, and effective.

This story is well told by Mr. Beach. Except for the lack of an index, a feature which is almost indispensable in a work of this character, it is a satisfying production, well printed and with numerous illustrations. The details, of course, are mainly of interest to the friends of Marietta. But to the general reader the account of the men who made and developed the college, obscure as most of them were, affords an inspiring example of self-sacrifice for a cause that was worth the sacrifice. Like the history of many similar institutions, it affords a sharp contradiction to the assertion that our national development for the last hundred years has been predominately along materialistic lines.

L. B. Richardson
Dartmouth College

In the Lay Magazines

"So You Are a Professor!" by Merlin H. Hunter, *Christian Science Monitor*, Weekly Magazine Section, October 2, 1935.

If a college professor teaches but ten or twelve hours a week, what does he do? Here the professor speaks, "presenting samples of his happy, carefree hours from sunrise to sunrise." For one thing he gives examinations and marks the papers resulting, frequently far into the night. There are also conferences with students. During these the student and his professor really get to know each other, and "any man who is not willing to give many hours to conferences has no business being a professor." The author reports typical conferences with typical students—amusing and not so amusing.

Furthermore, there are agents with whom the professor must contend. "If every college professor carried all the life insurance that every agent is sure he should carry, he would have to borrow upon his insurance in one company to pay the premium in another." And books—"books, of course, a professor must have, but it is remarkable how much better the agent knows what he should have than the professor himself." Then, too, there is the mail. Requests for letters of recommendation; letters from parents (seldom complimentary); requests to address this or that organization. The last-named item is a volume of woe in itself.

And there is the telephone. "Years ago," writes Mr. Hunter, "one of my professors made the remark that there are public utilities and public nuisances, of which the telephone is an example of the latter."

In his spare time the professor is also expected to do research. "He must prepare addresses to be given before scientific societies; he must write articles and books, so that, after all, there will be some real, tangible evidence that he has been productive."

For all this the professor receives a salary whose adequacy is open to argument. His training is long and expensive; he needs a decent living for himself and his family. "But whatever the money remuneration, the conscientious professor must consider as a part of his reward the fact that he has a part in shaping future moral, social, and economic conditions through the students who have come under his influence."

"I Was Fired from a Hick College," by Wendell Brooks Phillips, *Atlantic Monthly*, October, 1935.

Mr. Phelps was fired from a Hick College, and his article is both a personal explanation and a succinct statement on academic freedom. The question of academic freedom is peculiarly acute in the South where most of the college constituencies have not the slightest notion of what a liberal education is. On the other hand, the Southern Association of Colleges and some other agencies demand that intellectual standards be raised. Thus the smaller colleges are put in an impossible position.

> The only faculty member who could fulfill both requirments would be an intelligent and highly trained scholar on the one hand and a consistent fundamentalist on the other. Unhappily . . . such men are increasingly hard to find.

And unhappily for Mr. Phillips, he, himself, could not qualify. He states his philosophy of teaching simply:

> that man's spirit should be sincere, courageous, and serene; that gentle irony should be poured over bigotry and smug complacency wherever they are found; that a guise of beauty should have high place in our scheme of values; and that the entire pattern of conventional American life, . . . should be sharply questioned.

Mr. Phelps not only practiced what he preached, but he wrote an article in the *Atlantic Monthly* called "I Teach in a Hick College."[1] That was the beginning of the end—dismissal from his college and a very interesting excursion into the question of academic freedom and the plight of the small college everywhere.

[1]CXLIX (March, 1932), pp. 327–32.

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